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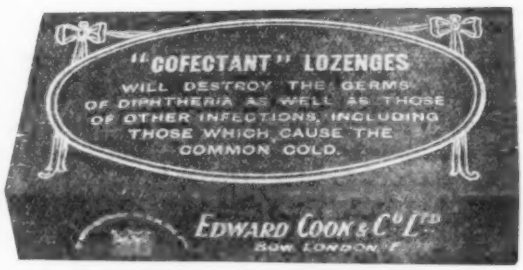

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ON

NERVOUS AND OTHER MEDICAL DISORDERS AS SEEN AT AN EYE HOSPITAL.

Delivered at the Society's Rooms, March 16th, 1916,

BY JAMES TAYLOR, M.A., M.D. EDIN., F.R.C.P. LOND.,

PHYSICIAN TO THE NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, QUEEN-SQUARE; PHYSICIAN TO THE MOORFIELDS EYE HOSPITAL; CONSULTING PHYSICIAN TO THE QUEEN'S HOSPITAL FOR CHILDREN.

MR. PRESIDENT AND GENTLEMEN,—I thank you very sincerely for the great honour the society has done me in asking me to give the Harveian lecture on this occasion. When I looked at the list of Harveian lecturers after accepting your invitation I was rather appalled at my temerity in venturing to join myself to such a distinguished band, but I knew that I could reckon on the forbearance of an audience of this society which I have known so long—not so intimately, I regret to say, in recent years as I did in a past which is rapidly receding into distance.

I have long wished to do something more than I have yet done to try as far as in me lay to impress upon our profession the enormous importance of ocular and visual signs and symptoms as indications of general disease. I have had unique opportunities as physician to the Moorfields Eye Hospital for seeing cases which illustrated this, and I should like publicly to acknowledge my very great indebtedness to my surgical colleagues at Moorfields for the opportunities of observation which they have so generously placed at my disposal. I have sometimes been tempted to think that if they had not been so generous I might have been able to do more with fewer cases, for it is not easy to keep under observation in London for continuous periods the large number of cases which one sees under such circumstances. And until one comes to work at an important eye hospital it is impossible to realise how large is the number of patients who seek advice at such a hospital on account of some eye trouble which is but an indication of a general condition. The eye, however, is such a necessary and sensitive organ that any little defect in its muscular mechanism or its seeing power very quickly drives a patient to seek help at an eye hospital.

OPTIC ATROPHY.

I have gone carefully over the notes of the cases I have seen at Moorfields during the last five years, and it may interest you if I deal with these in classes. By far the largest group—233 in number—has comprised those who came on account of failing vision, and in whom this failing vision was found to be associated with optic atrophy. Now, in the great majority of these cases, the optic atrophy was found to be associated with other conditions. In over 200 of these cases there were definite signs of tabes or general paralysis of the insane, sometimes only the Argyll Robertson pupil—in one case on one side only, sometimes only the absence of knee-jerks and lightning pains, sometimes both these conditions, occasionally gastric crises. It is rarely that ataxy occurs in cases of tabes with optic atrophy. This has long been known, and my experience amply confirms it, for in only two of these 200 cases was ataxy complained of, and in only one was it very marked. Signs indicative of general paralysis were present in only three or four cases, but one must remember that it is not uncommon for mental symptoms indicative of general paralysis to come on some years after the patients have been totally blind.

In a few of the cases the optic atrophy was the result of retrobulbar neuritis, and in many of these signs indicative of disseminated sclerosis were present or came on under observation. It is worthy of notice that comparatively few cases of disseminated sclerosis are seen at Moorfields. The reason of this no doubt is that signs indicative of interference with the motor system usually precede ocular or visual signs in this disease, so that patients with early disseminated sclerosis are much more likely to seek advice at hospitals like Queen Square, and it is only when failure of vision with optic atrophy, or diplopia from paralysis of ocular movements are the early sign, that patients go to Moorfields. So that in most of those cases other signs can be detected, if carefully looked for, indicating the true nature of the condition.

Another class of cases in which optic atrophy is present is that in which there is evidence of lesion at the optic chiasma. In such cases, besides the presence of atrophic changes in the nerves, there is usually an indication of interference with the visual fields. In many of the patients when they first come to hospital there is already complete blindness of one eye, and the presence of well-marked blindness of the temporal field in the other. But in most of those cases, if one is dealing with a fairly intelligent patient, it is not difficult to satisfy oneself that the defect of sight in the already blind eye first showed itself in an impairment of the temporal field in that eye, and in some of the cases when they come under observation there is still left in the so-called blind eye a slight degree of vision in the nasal field of that eye. The fields which I show you are characteristic fields of this condition. The patient with the second field when he first came under observation had still a good nasal field in the right eye, a very indefinite nasal field in the left, while both temporal fields were already quite blind. It is to be remarked in reference to these pituitary cases that, as Cushing has shown clearly, bitemporal hemianopia is by no means invariable. It is also to be remarked that even in tumour cases in this region optic atrophy is the rule and optic neuritis is rare. I have only personally known optic neuritis occur once in a patient with signs of disease of the chiasma, whom I saw through the kindness of Mr. Richardson Cross, who has recorded several interesting observations on this condition, and it is not unimportant to know that this patient made spontaneously a good recovery.

Among the cases of optic atrophy must also be mentioned a few in which the condition is a toxic one—the result of tobacco, often with the addition of alcohol. In these cases, unless the condition has been too long established, and if the toxic agent can be definitely excluded, there is usually complete recovery. In some cases, however, either through the failure of the patient to abstain from the toxic agents, or because the impairment of function of the nerve is too severe, recovery is incomplete, and a condition of optic atrophy, not necessarily progressive, remains. Among the optic atrophy cases also are a few—only two, possibly three—in which the condition is that associated with the name of Leber—the condition of family optic atrophy. In these cases the history is curious. One would expect that the impairment of vision

would be slow and gradual, and in some cases it is so. But in others it is extraordinarily rapid, and only rarely does it result in complete blindness, and the atrophy is often preceded by neuritis.

DEFECT IN OCULAR MOVEMENTS.

The next largest class of cases I have had referred to me have been the cases which have come on account of some defect in the ocular movements. One would expect that diplopia would be complained of in all those cases, but this is not so, for in a certain number of cases of third nerve paralysis, whether complete or partial, ptosis has been the first sign, and if there is complete ptosis occurring either before or simultaneously with affection of other ocular movements controlled by the third nerve, there will, of course, not be diplopia. Of these cases of ocular paralysis I have seen in the period under discussion 62. In by far the largest number the third nerve has been affected. Sometimes all the branches have suffered, including the pupil, although in my experience I should say that the branch serving the pupil is that which escapes most frequently. The levator almost always suffers, so that ptosis is nearly always present. Sometimes, as already stated, this is complete; often it is incomplete, and then one can see clearly the divergent strabismus, the result of the action of the external rectus supplied by the sixth nerve, which is no longer antagonised by the internal rectus supplied by the branch of the third nerve.

In some of the cases of third nerve paralysis there have been definite signs of tabes; in most there has been good reason to suspect syphilis. But there are one or two classes of cases in which the third nerve is affected in which syphilis plays no part. There is, e.g., the curious and interesting class of cases known as migraine ophthalmoplégique. The ordinary migraine—migraine ophthalmique—as you know, is characterised by headache, visual sensations often unilateral, sometimes hemiopia, but in migraine ophthalmoplégique we have to deal with a condition in which there is paralysis of an ocular nerve—usually the third, occasionally the sixth—occurring in association with unilateral headache. The condition is a recurring one, but after each recurring attack of headache, with ocular paralysis, recovery from the paralysis is less and less complete, and finally the patient is left with complete paralysis of the affected nerve, and then not infrequently the headache ceases. I have had eight of such cases in the period I am dealing with, and in seven of them the third nerve was that affected. The pathology of the condition is obscure, although in two cases that have been examined post mortem a local condition affecting the nerve has been found. It is interesting to note that in none of the cases of this affection that I have seen have there been any visual phenomena such as occur in the ordinary form of migraine. Third nerve paralysis may also be present in lesions of the crus cerebri, where it is usually associated with paralysis of the limbs of the opposite side. I have only had one example of this.

Besides the third nerve cases there have been a few in which the sixth only has been affected. It has been said that you may get sixth nerve affection as a result of exposure to cold. I am very sceptical of this, and while I do not say that it never occurs, I can say that I have seen several cases in which this has been the alleged cause, but I have watched them long enough to satisfy myself that they were really an early sign of a more grave affection. Thus in one case the patient later developed signs of disseminated sclerosis, in another tabes, and in another third nerve paralysis was later superadded and recovery took place under antisyphilitic remedies. Another point of some importance is that in all the cases of facial paralysis (i.e., seventh nerve paralysis) I have seen—a condition which we recognise as frequently the result of exposure to cold—I have never seen sixth nerve paralysis associated with this affection of the seventh nerve.

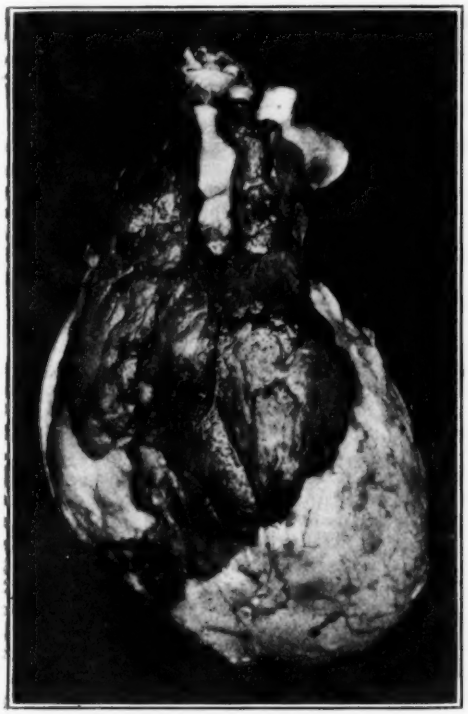
Ocular nerve paralysis also occurs as a result of alcoholic poisoning. If one examines carefully cases of alcoholic neuritis one can nearly always verify the presence of nystagmoid jerking on deviation of the eyes. I believe that this jerking indicates weakness of external recti muscles resulting from a neuritis affecting the sixth nerves, and in some cases this neuritis is severe enough to cause actual paralysis of a sixth nerve. I have also seen the third nerve affected in alcoholic neuritis, and when this is the case it indicates very profound poisoning and a danger of sudden death. In one such case seen in hospital I found the patient dead on going up to her bedside. It has been suggested that in such cases there is neuritis affecting the vagus nerve. I need hardly remind you of the frequent occurrence of ocular palsies after diphtheria, and how difficult it often is in such cases to get a history of sore throat. I have only seen two such cases at Moorfields in the last five years. These had already been under care elsewhere, and the ocular affection was only one of many symptoms. In some other classes of case diplopia is the symptom on account of which the patients seek advice—viz., a degenerative condition of the cells of ocular nuclei, so-called polioencephalitis superior. This is a condition analogous to bulbar paralysis and also to progressive muscular atrophy. It is, is fact, progressive muscular atrophy affecting the ocular muscles, depending upon decay of the nuclear cells. It is sometimes syphilitic but more frequently not. In one of three cases on my list the Wassermann reaction was positive. The condition is usually progressive, and may result in complete paralysis of all ocular movements; but there is apparently no great tendency for the condition to spread in such a manner as actually to endanger life, although I have known it to occur with bulbar paralysis which, as we know, is nearly always fatal.

Myasthenia Gravis.

Another condition causing diplopia is that known as myasthenia gravis. This is a disease which has recently and deservedly received much attention, and although it cannot be said that its true nature and origin have yet been discovered, enough has been done to enable us to recognise its importance and its frequent seriousness. It is by no means a new disease, but there is no doubt that many of the cases were at one time regarded as hysterical although they often ended fatally. It is particularly interesting in its connexion with ocular conditions, for nearly all the cases I have seen in recent years have been those of patients who have sought advice on account of defective eye movements. Of such cases I have seen 13 in the last five years at Moorfields. The disease is characterised by the great variability in the muscular weakness. Even in regard to the eye muscles in which this variability can be most easily observed this is very striking. A patient may have, when first seen, double ptosis usually

more marked on one side, and almost complete paralysis of all ocular movements. A few hours later the same patient may have both eyes well if not completely open and the impairment of ocular movements may be scarcely discernable. So that there was, no doubt, some excuse for regarding such a condition as "functional." But if such a case is investigated it will be found that especially in regard to ocular defects the condition is one which cannot be simulated. It is impossible, e.g., for a patient voluntarily to turn one eye well outwards without turning the other inwards, or to turn one eye downwards while the other remains in the horizontal plane. Inquiry also will elicit the fact that the patient's arms are easily tired. If the patient is a woman she will frequently volunteer the statement that she cannot do her hair in the morning without resting her elbows on the dressing table, and that even with this help she can only do it with great difficulty. A similar weakness is complained of in the lower limbs. Only very short distances can be covered; the patient must rest, in order as it were to accumulate enough energy for another effort. The voice has often a nasal quality, and if the patient be asked to read the articulation becomes more and more indistinct and phonation more difficult, until she becomes first inarticulate and finally voiceless. Similarly in reference to mastication. At times the patient can bite and masticate well; at other times chewing is impossible and liquids or semi-liquids are all

FIG. 1.

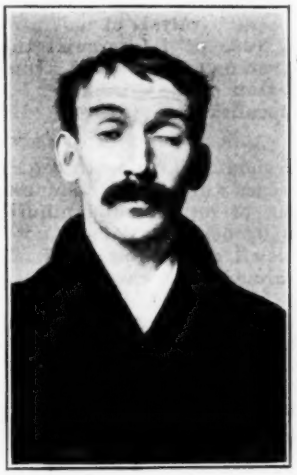


To show marked enlargement of thymus in a fatal case of myasthenia.

that can be taken, and even with these there may be difficulty in swallowing. Often there are attacks of difficulty in breathing, and not infrequently one of these ends fatally.

Such a condition, it will be seen, although when well marked scarcely likely to be mistaken for anything less than a serious disease, may, in its slighter form be very elusive and difficult of detection, but I cannot help thinking that in the patient in whom the ocular weakness is present—and that is the case in the great majority—the true nature of the condition should be recognised. An interesting condition can frequently be demonstrated in the affected limb muscles—what is known as the myasthenic reaction. If an affected muscle be stimulated with a faradic current a good response may be evoked at first, but as the muscle is repeatedly stimulated the response becomes more and more feeble, until finally it cannot be evoked at all, even with a current much stronger than that which at first elicited a good contraction. I have also seen a case in which the knee-jerk, which could be easily elicited in the ordinary way at first, was quite unobtainable after it had been repeatedly evoked.

FIG. 2.



Ocular palsies in a patient with severe myasthenia who ultimately recovered.

What is the nature of this disease? Frankly, we are still much in the dark. The pathological findings are by no means constant. Collections of cells have been found in the muscles and in the spleen in some cases. Careful search has failed to reveal them in others. In some cases also an enlarged thymus has been present, and I am able to show a striking example of this. (Fig. 1.) But this also is by no means a constant finding. The effect of treatment is also very indefinite, and I am afraid one must at present be guided for the most part by symptoms. Strychnia hypodermically sometimes helps; in one case I saw remarkable improvement follow the administration of thyroid, but although I have tried it many times since, I have never had any similar success. And in one case, of which I show a photograph, recovery fairly complete from an apparently hopeless condition followed on his removal to his own home. I have heard quite recently from this man who when he left the hospital four years ago seemed to be almost at the point of death. He tells me that he is able to walk about all day, can do a fair amount of cycling without getting tired, but is not considered by his doctor to be yet fit for work. (Fig. 2.)

Ocular Palsy in other Conditions.

Diplopia from ocular palsy also occurs in Graves's disease, but I have only once known a patient with Graves's disease come for advice on account of the diplopia. I shall have more to say on the subject later on in my lecture.

In cases of intracranial tumour ocular paralysis is frequently present. The paralysis, as has been pointed out, may be of one of two kinds—direct, in which the ocular nerves or their nuclei are directly involved in the tumour or directly pressed upon. In such cases the defects in ocular movements are frequently valuable indications of

the site of the tumour. But the affection of ocular movements may also be indirect—i.e., the result of the general intracranial pressure resulting from ventricular distension. Such indirect pressure usually affects in the most marked way one or both sixth nerves, the result doubtless of the fact that such nerves are very fine and have a long and exposed course. Occasionally such pressure also interferes partly with the third nerves, but whereas one or both sixth nerves may be completely paralysed under such conditions, it is rare to have anything more than partial affection of third nerves. So that paralysis of one or of both sixth nerves in any case of intracranial tumour is in itself no indication of the site of a tumour, and even partial affection of the third nerve *by itself* is of little help in localisation.

ALBUMINURIC AND GLYCOSURIC RETINITIS.

I should like now to refer to another large class of cases which came to Moorfields for advice—viz., cases of retinitis, albuminuric and glycosuric. Of the former class I have notes in the period with which I am dealing of 47. In the great majority of albuminuric cases the visual affection resulting from the retinitis has been merely an incident, but it has often been the first incident of the disease which has caused the patient to seek advice. In other cases, however, there is already a history of a paralytic attack either transient or permanent, and although examination of a particular specimen may often fail to reveal the presence of albuminuria, inquiry will often elicit a history of frequent micturition, sometimes of headache, and examination nearly always reveals a strongly acting and hypertrophied left ventricle. It should always be remembered, however, that in some cases it is exceedingly difficult, so far as the optic nerve and retinal condition is concerned, to distinguish between the neuro-retinitis of intracranial tumour —especially cerebellar—and albuminuric retinitis, and I have known more than one case in which it was practically impossible to say from ophthalmoscopic appearances alone which of the two conditions was present. The outlook in such case is, of course, extremely unfavourable. But experience has led me to modify the view which I once held that albuminuric retinitis always meant death within a year. I believe it nearly always does in a young patient; it is not, I think, of such ominous significance in older people, and I have known death delayed as long as three years, and once as long as five, after the presence of albuminuric retinitis had been recognised. Of course, if any paralytic seizure has already taken place the probability is that the duration of life is to be measured by months rather than by years.

I have had 15 cases of *diabetes* referred to me. Several of these were cases of diabetic cataract the medicinal and dietetic treatment of which I was asked to undertake—in several instances with a view to operation if the treatment was successful in getting the patient into a condition in which operation might be regarded as fairly safe. It is always a difficult question to decide in a case of diabetes whether operation for cataract is fairly safe or not. I consider that such an operation is always attended by danger, but if acetone and diacetic acid are absent from the urine for some time I am inclined to think that operation may be undertaken with a fair degree of safety. Yet I have seen in such a case a very grave condition supervene after operation, and acetone and diacetic acid appear in the urine in great abundance, although neither was present for some time before operation. In two of the cases of diabetes referred to me optic atrophy was present, but with no central scotoma, and in one of them the knee-jerks were absent. There were no signs of tabes. In two other cases the glycosuria was associated with signs of toxic amblyopia—pale discs and central scotoma for colours. In these cases there was a history of excessive tobacco and the free use of alcohol, but I think there is no doubt that comparatively small quantities of these poisons are effective in evoking the signs of toxic amblyopia if sugar be present in the urine, and I have known one case of toxic amblyopia with distinct central scotoma for colours in a patient who had never used tobacco and had not tasted alcohol for 20 years, but in whose urine I found sugar present. In 8 of the diabetics there was retinitis with white spots and hæmorrhages; in only one of the eight was there albuminuria, but I am inclined to think that if a larger number of cases of retinitis in diabetes were examined albuminuria would be found to be present in a greater proportion, and it is often not easy to say to which category a given case belongs. In a pure diabetic retinitis I rather lean to the opinion that the outlook as regards duration of life is better than in cases of albuminuric retinitis.

GRAVES'S DISEASE.

A disease of great interest and importance and of frequent occurrence at ophthalmic hospitals is Graves's disease. Of this condition I have had 31 cases referred to me in the last five years. Of these 31, four were men. Of the 31 cases 4 were under 20, 9 between 20 and 30, 15 between 30 and 40, 1 between 40 and 50, and 2 (both in men) between 60 and 70. It is interesting to notice how one's conclusions are often corrected by observations extending over a large number of cases. At one time at Moorfields I had seen several successive cases of Graves's disease in men, well marked and unmistakable in every other respect, yet in whom I was quite unable to detect any goitre. I was rapidly slipping into the belief that goitre did not occur in men with Graves's disease when I had a rude correction to my superficial view in having the opportunity in two successive weeks of seeing two cases of Graves's disease in young men, each of whom had a large goitre. Of the 4 cases in men seen in the period under review two had no detectable enlargement of the thyroid. I may mention that in the most marked case of proptosis I have ever seen in a man no enlargement of the thyroid could be detected. Goitre in women suffering from this disease is, on the other hand, extremely common. There was not one of the 27 women in my present list who had not a well-marked goitre, and in most of them the right lobe was larger than the left. I cannot, however, say that this was invariably associated with greater prominence of the right eye, yet inequality in the degree of proptosis of the two eyes is very common; indeed, I believe it is the rule.

Diplopia is a condition which I am sure is more frequent in Graves's disease than is generally recognised. Occasionally it is so well marked that patients come complaining of it. More frequently a question has to be asked before it is acknowledged. Sometimes there is obvious weakness of one or both external recti. In one of my 27 cases upward movement of the eyes beyond the horizontal plane was quite absent, and this was not a case in which the proptosis was at all extreme. I have only once seen optic atrophy in Graves's disease. It was in a

man aged 45, and I could find no other sign with which to associate it. It was, I feel sure, a mere coincidence and not a direct result of the Graves's disease. Tremor is probably the most constant sign. It is usually fine and rhythmical, affecting both hands equally, but occasionally it is quite coarse in character. A tendency to sweat readily is nearly always complained of. This is usually spontaneous, but increased on slight exertion. It is not infrequently, when extreme, associated with intractable diarrhœa which is sometimes fatal, and I think it must be due to an affection of the vaso-motor mechanism. Rapid heart action is, of course, very common, but not invariable, and I think that the cases occurring late in life have less tendency in this direction than those occurring in early life. Of course, many cases are incomplete, but unless care is taken these may easily develop into full-blown cases of the disease.

There is little doubt in my mind that the cause of the different phenomena in Graves's disease is an excessive thyroid secretion. I have known one case in which all the symptoms and signs—except an enlarged thyroid—developed in a patient who took large quantities of thyroid with the view of reducing a not excessive corpulency! It is difficult to avoid the suspicion that in many cases fright or other emotional disturbance has some causal relationship to the onset of the symptoms in this disease. It has, of course, been pointed out by more than one observer that a well-marked case of Graves's disease—with wide-staring eyes, rapid heart, tremor, and perspiration—is really a pictorial representation of terror. In what way emotional disturbance acts so as to perpetuate this picture it is not easy to understand, although several theories might be suggested. Incidentally it may be mentioned that there is a similar difficulty in reference to chorea and the effect of emotional disturbance in evoking the signs of this disorder, and I may mention the fact that I have known a case of chorea and one of Graves's disease in which the manifestations of the disorder in each case followed almost immediately on the shock of observing that menstruation, which had not been anticipated or prepared for, and the nature of which was not understood, was actually present.

I should like to say just a word about the progress of these cases under ordinary out-patient treatment. I do not wish to minimise in any way the gravity of this disease. One has seen cases go wrong both physically and mentally; one of the most terrible disasters is the sloughing of the corneæ, which sometimes results in complete destruction of the eyes. Nevertheless, in the vast majority of the cases the outlook is good, and a cure more or less complete is confidently to be anticipated. Of the 31 cases I have referred to not one has definitely become worse, several have been completely cured, and in most the disease seems to have become quiescent. I always prescribe belladonna, and from the manner in which the patients return for treatment and the discomfort which they frequently say they experience when they are without it for a few weeks I cannot but think that it is a most helpful drug in this disease.

HEMIOPIA.

Another class of cases which, through the kindness of my colleagues I see in considerable numbers at Moorfields, are those of hemiopia. I defer in the meantime consideration of the interesting class associated with lesions at the chiasma, to which I have already briefly referred, and mostly therefore cases in which there is defect in both temporal fields, and restrict myself to cases of *homonymous hemianopia*—i.e., those in which the same-sided fields in each eye is defective. Thus, a case of right homonymous hemianopia is a case in which the temporal field of the right eye and the nasal field of the left are defective.

Of such cases in the last five years I have seen 22, and in studying them several points of interest emerge. In 13 cases the defect was left-sided, in 9 right-sided. The defect in the majority—viz., 16—was of the half field; in two it was of three-quarters of the field, only one quadrant remaining active, while in four the defect was quadrantic. The illustrations show this quite clearly. (See Figs. 3, 4, and 5.)

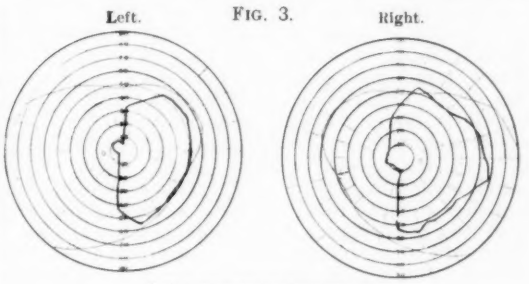


FIG. 3.

Left homonymous hemianopia.

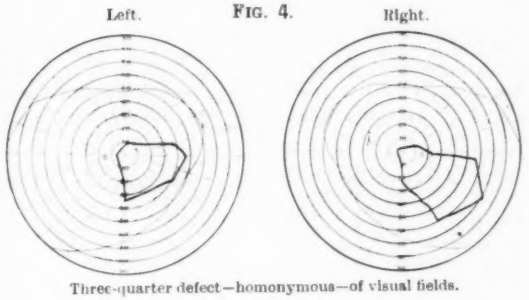


FIG. 4.

Three-quarter defect—homonymous—of visual fields.

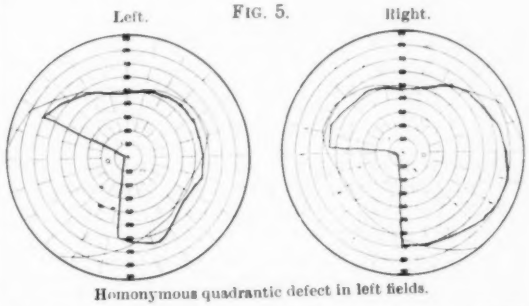


FIG. 5.

Homonymous quadrantic defect in left fields.

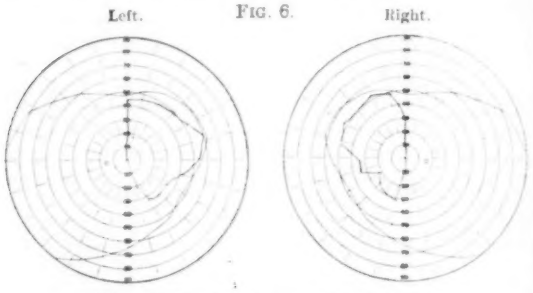
Another point of interest is that in only 4 was there associated with the hemiopic condition loss of motor power; in 2 cases right hemiplegia and in 2 left hemiplegia, and in the remaining 18 there was no evidence of hemiplegic weakness and no history of such a condition. In only one case was the onset of the hemiopia attended with loss of consciousness; also an interesting question is as to the nature of the lesion causing the hemiopia. In 6 cases there was either valvular heart disease or hypertrophied heart with high arterial tension, in 3 there was good reason for regarding the condition as the result of syphilitic vascular disease, but this leaves the large number of 13, roughly 52 per cent., in which neither in the heart, the vessels, nor the

state of the kidneys was anything discovered to suggest a cause for the hemiopia. This, I think, is really remarkable, and it is a fact which has struck me before, and one to which Dr. C. O. Hawthorne has called attention.

It may be asked what happens to such cases? Do they get better? Do they have later any fresh vascular lesion? We must suppose that the lesion which causes the hemiopia is a vascular one. It is not easy to follow up these hospital cases. But some which are still attending have developed no fresh lesion, and I know now of a patient whom I saw with hemiopia 12 years ago and who is still well and in active work although still hemiopic. Does hemiopia ever recover? A short time ago I should have said no, but I saw some 18 months ago a patient sent me by Mr. Percy Flemming, a young girl aged 16, who had hemiopia after scarlet fever. Mr. Flemming saw the patient a year later and found that the hemiopia had completely disappeared. I also saw a few years ago a patient sent me by Mr. Herbert Fisher—a lady over 60 with left-sided weakness and left hemianopia. She remained very ill for several weeks, having many slight convulsive seizures, but finally made a complete recovery and still remains well. A very interesting condition in this patient was that for several weeks she had hemiopic hallucinations—seeing figures, &c., in her blind fields. These gradually disappeared, and the hemiopia completely cleared up as the hemiplegic weakness had already done, and she is now in excellent vigorous health.

It has long been known that lesions at the optic chiasma may produce *bitemporal hemianopia*—i.e., loss of vision in the temporal halves of each field (Fig. 6), heteronymous, as distinguished from the

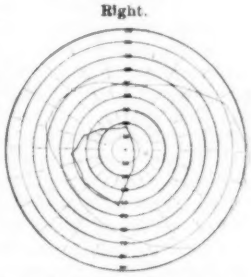
FIG. 6.



Bitemporal hemianopia from lesion at chiasma.

homonymous hemianopia which we have been considering. Growths in, or enlargement of, the pituitary body will produce pressure at this point. It is also known now, thanks to the researches of Marie and others, that disease of this body is not infrequently associated with acromegaly, and it is also known that in this disease bitemporal hemianopia is not infrequently present. But acromegaly is by no means a constant result of such pituitary disease, and on the other hand pituitary disease does not, as Cushing and others have shown, invariably cause bitemporal hemianopia. As a matter of fact, symmetrical bitemporal hemianopia is comparatively uncommon, for one eye is usually more affected than the other, and not infrequently when a patient first comes under observation there is complete blindness of one eye and loss of temporal field in the other. (Fig. 7.) Yet, as has already been stated, careful inquiry of an intelligent patient will often convince one that the temporal field of the blind eye was the first one to go. Cushing has also shown that colour defects often exist before blindness for an object is present, and that scotomata may exist before the half field goes. I am afraid that in the 7 cases I have seen in five years in which there was evidence of tumour or disease of the chiasma, the investigation in the early stages was impossible as in all of them the disease was fairly well advanced before they came under observation. In 5 of them the bitemporal character of the hemianopia was distinct—2, however, were blind in one eye before they came under observation. In one of these the features were certainly acromegalic, but an X ray of the sella appeared normal. In 2 others there was no evidence of bitemporal hemianopia, but distinct evidence of acromegaly.

FIG. 7.



Loss of temporal field in right eye in a case of lesion at the chiasma. The left eye was blind, but there was a history indicating persistence of the nasal field of that eye after the temporal field had been lost.

I am able to show you characteristic fields of some cases, and through the kindness of Dr. Archibald Reid X ray photographs, not only of the normal sella but also of the enlargement, often with disappearance of the anterior clinoid processes, which takes place as a result of diseased conditions. The outlook in such cases must always be grave, but in some cases, at least, relief can be afforded by operation, and it is interesting to know that even restoration of visual fields may take place. As I have already stated, pallor of the discs without inflammation or swelling is the rule in these cases, but occasionally optic neuritis may be found.

RETINAL EMBOLISM AND THROMBOSIS.

An exceedingly interesting class of cases is that in which there is retinal embolism or thrombosis. I class these two together because of the difficulty in certain cases of deciding which condition was present. At one time embolism was regarded as the most likely cause of the vascular blocking in these cases; then, when it was recognised how frequently a vein was the vessel blocked, thrombosis was invoked as the invariable cause; now, however, thanks chiefly to the admirable work of the late George Coats, we know that both processes are accountable for a similar clinical condition. When the block is in a vein it is obvious that the process is a thrombotic one; when it is an artery the process may still be thrombotic, and it is only when some condition favouring the occurrence of embolism—such as cardiac valvular disease or aneurysm is present—that we can regard the condition as being probably embolic.

Of these cases I have notes of 26, and in 5 of them there is reason to presume that the condition was embolic. In others—i.e., those in which there was no evidence of heart disease—the vessel blocked was an arterial branch in 7, a venous one in 13; and it is interesting to note that in all these cases, except one, there was evidence of considerable cardiac hypertrophy, with increased tension, and often there was albuminuria. Another point of interest is that in several there was a gradual process of failure of vision, extending sometimes over weeks, culminating in sudden complete blindness of the affected eye, this blindness usually clearing up in some degree, but never passing off completely. Incidentally, I think it is

worth noting that even with a hypertrophied heart and high tension the condition induced was so frequently one of thrombosis, sometimes venous, sometimes arterial, for such a fact may help us to understand why in similar cardio-vascular conditions we may have cerebral thrombosis, not necessarily hæmorrhage, causing hemiplegia.

The majority of patients suffering from retinal thrombosis are between the ages of 50 and 70, in a few the condition occurs at an earlier age, and it is present sometimes in quite young anæmic girls. What is the outlook as regards life in such a case? It is evident that this is determined by the general cardio-vascular condition, and I have been surprised at the comfortable manner in which such patients frequently continue to live for considerable periods. I saw last month a patient whom I first saw in 1911 with marked arterial thrombosis in the right eye. The eye is almost blind still, but her general condition is good. She has no albuminuria, but her heart is, and has been since I first saw her, definitely enlarged. I also saw in October, 1913, through the kindness of Mr. Foster Moore, a man aged 81, a patient of Mr. Holmes Spicer, who 17 years before had attended under Mr. W. Lang for apparently retinal thrombosis of the right eye. Evidence of this condition persisted when I saw him, and there was also albuminuria, but his general condition was good.

Another question of interest is what happens to the affected eye? It is well known to ophthalmic surgeons that acute and painful glaucoma is a not uncommon sequel to retinal thrombosis. I have actually seen three patients who were attending for this condition develop acute glaucoma which necessitated excision of the eye. It will be seen that this class of cases is a very interesting one from several points of view.

OPTIC NEURITIS.

One of the most interesting groups of cases which a neurologist sees at Moorfields naturally consists of those in which optic neuritis is present. One has to be chary of jumping to the conclusion that all such cases indicate the presence of an intracranial growth. In the majority of cases such a diagnosis is undoubtedly the correct one, but, as I have already stated, it is well recognised that in certain cases of kidney disease a condition of the fundus oculi is present which, from ophthalmoscopic appearances alone, cannot be distinguished from that occurring in cases of intracranial tumour, and occasionally optic neuritis is present in disseminated sclerosis. Another point that always has to be remembered is that cases of intracranial tumour with well-marked, sometimes intense, optic neuritis, seek advice on account of headache or sickness, or some such condition, and for relief of such a symptom advice is usually sought not at an eye hospital. The truth is, that in many such cases even with intense optic neuritis, vision remains perfect, and it is significant that whereas in the same period I have seen at Moorfields 233 cases of optic atrophy the number of cases of optic neuritis has been only 38. Further, several of the cases of optic neuritis which I have seen at Moorfields have already been attending either at a hospital for nervous disease, or at general hospitals, and it has only been when the vision has become impaired through the persistence and progress of the optic neuritis that they have wandered away to an eye hospital. Under an ideal condition of medical work it should be possible to coördinate the observations at the different hospitals on the same patient, but in London superabundance of clinical material makes such coördination exceedingly difficult and very laborious.

Among these cases were some of very great interest. Thus one little girl of 6, a patient of Mr. Treacher Collins, came up with much impaired vision which was said to have come on a few weeks earlier after an attack of measles. She was found to have intense optic neuritis without headache or sickness. No visceral disease could be discovered. She came into hospital at Queen-square under my care, and her vision rapidly became worse, ending in complete blindness. She never had any sickness or headache, and no paralytic phenomena. The nature of this case remains very mysterious. Two years later I saw another patient, a woman of 52, who came as an out-patient to Mr. M. L. Hepburn and was referred to me. The history was that at the age of 8 she had had an attack of measles which caused blindness. The vision, however, improved, but remained impaired. She grew up, married, and had a healthy family. A short time before I saw her the vision had again become much worse and examination of the eye revealed a fresh condition of optic neuritis and evidence in the discs of the previous attack—no doubt occurring in early life and apparently after measles. The nature of this case I do not know. Of course, one would have liked to be quite sure that the disease preceding the optic neuritis was measles.

I saw last year a patient of Mr. Devereux Marshall, a child of 6 with optic neuritis, which had come on after an attack of chicken-pox. Another case of much interest was that of a girl of 11 under Mr. A. C. Hudson. She complained of headaches, and there was marked papillœdema of both eyes. It was apparently a case of intracranial tumour, but there was no localising sign. She had, however, evidence of consolidation at the apex of the right lung. She was put on syrup of the iodide of iron, went down to Clacton for a time, and came back with the optic neuritis quite gone, the discs looking somewhat pale, but the vision practically normal. In reference to this case I cannot help recalling a dictum of the late Sir William Gowers to the effect that if in any case of intracranial tumour he was quite sure that it was tubercular he would strongly deprecate any operative interference.

Another case of much interest is that of a man of 30 sent to me by Mr. Herbert Fisher in August of 1911. He had headaches and giddiness, and intense optic neuritis with swelling of the optic discs. There was no localising sign, but it was evident that unless something was done quickly he would become blind. I asked Mr. Percy Sargent to do a decompression operation, and this was done in September, 1911. The patient did well, his optic neuritis completely subsided, and he was able to return to his work in a shop. He remained at work until last year—i.e., for nearly four years—when he came complaining of some awkwardness with his left arm and leg. There was slight optic neuritis. He became an in patient again, and with rest, &c., improved. The improvement continues and he remains an out-patient. The indications are that there is something in his left cerebellum, but I do not propose to do anything further unless developments occur.

A somewhat tragic case was that of a girl of 21, sent to me also by Mr. Fisher. She had left-sided weakness, hemianæsthesia, and hemianopia, with intense optic neuritis. She came into hospital at

Queen-square, but she became rapidly worse, and died on the night of admission before any operation could be carried out. Unfortunately there was no post-mortem examination, but there was every reason to suppose that she had a deeply-seated large tumour in the right hemisphere, and that operation would at the best have given only temporary relief.

CONCLUSION.

This, gentlemen, concludes what I fear is a very cursory and superficial review of the varied and most interesting classes of cases I have had the opportunity to see at Moorfields. I wish it had been possible to follow them up more completely and effectually than I have been able to do, but I think what I have said will have impressed upon you the extraordinarily varied medical interests which, as it were, converge at any eye hospital. I have always regarded ophthalmic surgeons as amongst the most highly trained and scientific members of our profession. What I have said will have brought home to you the necessity, not only for highly specialised training in their own special work, but also the need for a broad general basis from which to work; and I hope it will also have impressed upon those of us who are not ophthalmic surgeons how necessary it is to recognise the importance of ocular and visual signs as indications of many different kinds of medical diseases.

"CAMP JAUNDICE" AND THE PARA-TYPHOID EPIDEMIC AT THE DARDANELLES.[1]

BY MM. A. SARRAILHÉ AND J. CLUNET.

ARMY surgeons who have had experience of colonial warfare have frequently observed that epidemics of jaundice make their appearance. Of this we have been able to collect some instances. Thus, Colonel Jones, during the Transvaal War, noticed a serious epidemic of jaundice preceded by an epidemic of "intestinal fever," and a few years later another under the same conditions affecting the Indian troops in a camp in the Punjab. From 1901 to 1911, a period of ten years, Surgeon-Major Dugrais observed an annual epidemic of jaundice in the camps at Servières, Tunisia, in which about 800 military defaulters were confined: "Every year at the beginning of June a few cases of jaundice appear; they rapidly become numerous, being accompanied by fever towards the end of June. Three weeks after the appearance of the jaundice the epidemic of febrile gastro-enteritis commences. The jaundice epidemic reaches its height in July and disappears in August. On the other hand, the febrile gastro-enteritis is especially common at the end of September and in October, only disappearing in February. The nosological history of the camp is identical each year to within about 15 days." One month before the Dardanelles epidemic there appeared at Chatby camp in Egypt an epidemic of jaundice, and it was often associated with a gastro-intestinal infection.

In practice amongst civilians small epidemics of jaundice, confined to a restricted number of cases, have often been noticed. Thus, recently P. Carnot and B. Weil-Hallé[2] reported an interesting observation of a family epidemic caused by an "icterogenous paratyphoid bacillus"; this epidemic was limited to 8 cases in which blood culture was impracticable and in which bacteriological research was confined to the stools of the patients.

Conditions of observation.—In the bacteriological laboratory of the Expeditionary Force at the Dardanelles we found research conditions particularly favourable for the study of a serious epidemic of "camp jaundice," the number of cases affected, amongst the French troops alone, exceeding several thousands.

The laboratory was in use from the beginning of June to the end of December. Thanks to the kindness of the directors, M. Barbot and M. Baratte, and in consequence of the valuable collaboration of our colleagues in the ambulances and regiments on the peninsula, we were able to collect precise information regarding the pathological conditions of the Expeditionary Force both before and during the epidemic. We gathered 148 jaundice reports, of which 66 were made and followed up by ourselves. Blood cultures to the number of 606 were made, of which 294 were positive. The extreme kindness of our English colleagues, and especially of Colonel Dudgeon, Colonel Jones, and Captain Briercliffe, made it possible for us to follow the analogous epidemic which meanwhile ran its course amongst the British troops of the Gallipoli Peninsula; whilst Lieutenant Campbell, who was in charge of the British bacteriological laboratory, was kind enough to communicate his results to us.

Course of the epidemic.—From the first weeks following upon the disembarkation a large number of cases of febrile gastric derangement were observed. This number increased in June, during which month 80 were notified, then 150 per week were evacuated per 10,000 men[3] present on the peninsula. (Fig. 1.) The height of the epidemic was reached towards the middle of July (196 were evacuated per week per 10,000 men present). Then it slowly decreased in August and in September (100 to 150 evacuations weekly); it was reduced to 30 to 60 in October, and to 25 to 30 in November and in December. But while the curve of the "typhoid group" of illnesses was declining in August an epidemic of jaundice began which rapidly developed until it equalled the first-named epidemic in importance at the end of September, and exceeded it in October. In December they both persisted, though reduced and nearly equal to each other. It is remarkable that the troops from the peninsula who were sent to Serbia in October took with them the seeds of their epidemic to a quite different climate, and that even at the beginning of January, in Salonika, the epidemic of jaundice persisted amongst them, whilst no single case of jaundice had been observed amongst the troops coming direct from France, though subjected to the same conditions of life.

In the British forces in Gallipoli the jaundice epidemic started a fortnight later than in the French force, but it followed an absolutely parallel curve, though retarded, and was still more important. In the English force we were unable to determine the relation of the curve of jaundice with that of the febrile gastric derangement, as no statistics were available for our purpose.

[1] Extract from the Reports and Memoranda of the Paris Hospitals Medical Society, Jan. 21st, 1916 Session. [Specially translated for THE LANCET.] Cultures of the organism isolated by Dr. Clunet from the jaundice patients have been sent to Dr. Leonard Dudgeon for detailed examination.

[2] Paris Hospitals Medical Society (see THE LANCET, 1915, vol. i., p. 190).

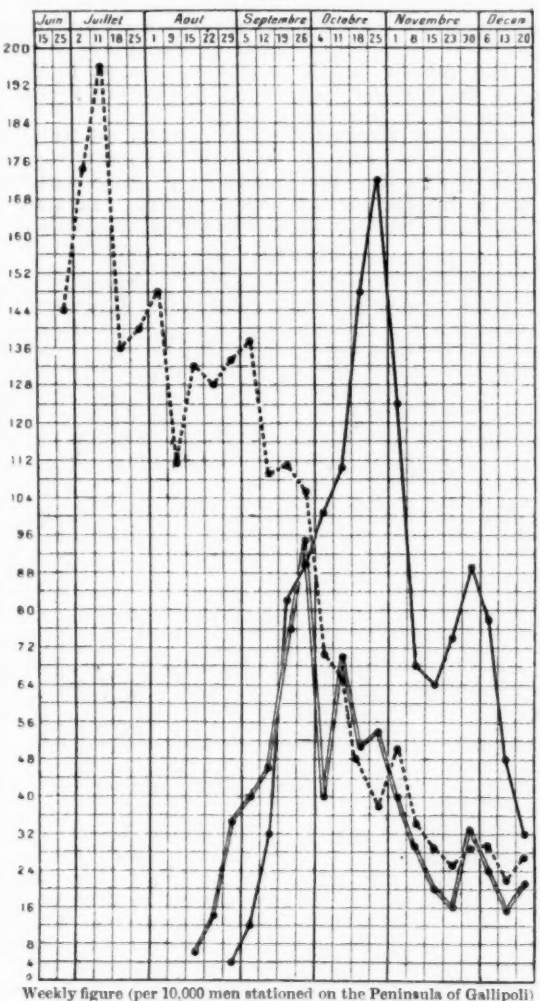
[3] In order to avoid giving any information whatever as to the effective numbers in the Dardanelles and their variations, all the numbers mentioned in this report are proportions only, calculated per 10,000 men present at the time when the observation was made.

It is remarkable that according to various precise and "revised" reports furnished by intelligent Turkish prisoners there was no case of jaundice amongst the Turkish troops, whose sanitary condition was in other respects deplorable and far inferior to that of the Allies, and who were separated only by a few yards from the French and British troops who were at the height of the jaundice epidemic.

The commencement of the epidemic presents certain interesting peculiarities. The first case appeared about August 10th amongst the sappers of a company of French Engineers who were just then detailed to organise the first-line trenches and subsidiary defences—a task in which the men were especially exposed and which was rendered very trying by the temperature, dust, and flies. On the next day 2 fresh cases were reported, the next day 3 or 4, then 8 or 10. Malingering was suspected, and picric acid was vainly searched for in the urine. Eight days later isolated cases were reported in the artillery, then in the infantry, then amongst the camp-followers. From the end of August the epidemic numbered its patients among all formations in the peninsula, and blood cultures afforded proof that it was indeed a question of infectious jaundice.

The epidemic of febrile gastric derangement and of jaundice was not the only one in the peninsula. In June, July, and August, and the beginning of September, a time when the phlebotomus papatasi was swarming in all the old walls of Sedd-ul-Bahr, the ternian fever was raging. During the same time dysentery made its appearance. The latter, amongst the French troops, always remains in the background. Only a few cases of amœbiasis occurred, and the "dysentery bacilli," isolated from the stools and studied by our friend Charles Richet, jun., appeared for the most part to be of diminished virulence and somewhat different from the usual types. On the other hand, amongst the English the epidemic was more serious, and there was an abundance of cases of amœbiasis contracted at Gallipoli, which is in no way surprising if the numerous germ-carriers who, before arriving in the peninsula, made long sojourns in Egypt or on the Suez Canal, are kept in mind.

CHART 1.



Weekly figure (per 10,000 men stationed on the Peninsula of Gallipoli) of patients evacuated. – – – for febrile gastritis (French); ——— for jaundice (French); ——— for jaundice (British).

If we mention dengue and dysentery, it is because some of our colleagues fancied that dysentery especially and summer diarrhœa—from which but few members of the Expeditionary Force were entirely free—were the cause of the jaundice epidemic. Dengue, in our opinion, could only have acted as quite a secondary predisposing cause, contributing to weaken the organism and from that point of view being far less important than the conditions of fatigue, climate, and feeding. Prolonged diarrhœa and dysentery certainly played a more important etiological part; but they are absent in a large number of typical jaundice cases under observation, and must, we think, also themselves be reckoned amongst predisposing causes.

Clinical Study.

1. *Febrile gastric derangements before the epidemic of jaundice*, during the months of June, July, up to mid-August, did not seem to us to differ sensibly from what we had observed on the French front. The very great majority of the patients had been vaccinated; true cases of typhoid were rare; in spite of fatigue, of climatic conditions, of conditions of dwelling and bad nourishment, the more serious types were few in number from the start, and typhus exceptional. True that at that period of the campaign the larger part of the sick were rapidly evacuated from the peninsula and were removed from our observation a few days after the blood culture. The clinical fact which especially attracted our attention during that period, and which moreover persisted since, was the frequency of sudden attacks. The night before a man would be performing his usual duties; in the evening he complains of a slight headache; he sleeps badly that night; the next day his temperature (sub-axillary) is 38° or 40° C., his tongue is coated, with red edges, and continuous fever appears. The premonitory symptoms usual are headaches and prolonged insomnia, epistaxis, progressive rise of temperature; eruptive pink patches are not so common.

2. *Febrile gastric derangements during the period of jaundice*—that is to say, commencing at the end of August—differ somewhat from those of the preceding period. True typhoid becomes rarer and rarer.

From November we have not identified a single authentic case. The epidemic diminishes in the number of cases, but especially in the decrease in the virulence of infection. We encountered several cases of the illness running its whole course in the peninsula without any necessity of evacuation; several patients were not even sent to the ambulances, and their febrile gastritis, with continuous fever for 15 or 20 days, was nursed and cured at their unit, in the trenches or under canvas, and sometimes the patients were not even undressed. The benign character of certain cases might have caused one to doubt the diagnosis had it not been confirmed by the blood culture.

Another characteristic of the febrile gastric derangements of that period is the frequency of hepatic symptoms—namely, increase in size and sensibility of the liver and especially increased size of the gall-bladder, with sharp pain on pressure and a sensation of epigastric obstruction and nausea. From the month of September on we observe these hepatic and cholecystic symptoms in more than half of the cases of febrile gastric derangement unaccompanied by jaundice.

The serious cases with suppuration are quite exceptional. Thanks to the kindness of Dr. Campbell, we were able to study a case of suppurative cholecystitis with perforation in an English patient. The culture of pus obtained during the operation showed a bacillus of the paratyphosus B type.

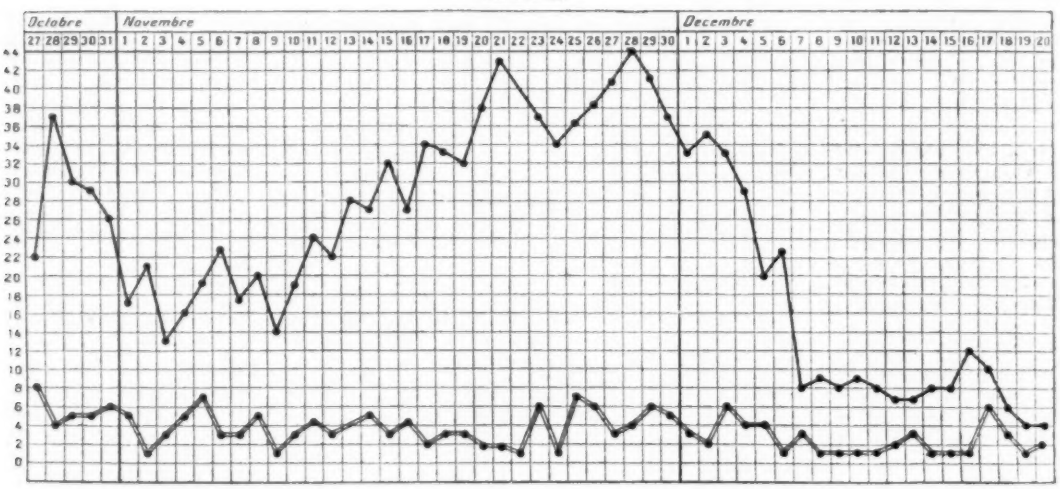
3. *Febrile jaundice* makes its appearance in the middle of August. The trouble commences, like an ordinary gastric derangement, with insomnia, headache, sudden heats, general curvature, malaise, and continuous fever between 38·5° and 40° C. From the beginning symptoms of cholecystitis are often observed: epigastric obstruction, nausea, shivering, pain and resistance in the body wall, localised at the gall-bladder. At the end of five or six days the urine becomes brown; one or two days later jaundice appears in the conjunctivæ and the sublingual mucosa, later extending to the skin generally. With the appearance of the jaundice a decrease in temperature to about 38° C. almost always coincides. Then the curve descends very gradually during from eight to ten days, subsequently returning to normal after a phase of hypothermia lasting from 24 to 48 hours, sometimes very clearly marked—36° C. and less.

The stools, sometimes diarrhœic, and which were brown or yellow before the jaundice, almost always become solid during jaundice. In most of the cases observed they are not colourless during this period; indeed, they often become darker. Pruritus is entirely absent. In spite of the favourable prognosis convalescence is often painful and very long; for one month and more asthenia and anorexia are persistent; sensitiveness of the gall-bladder is also often very clearly marked several months after the total disappearance of the jaundice. The spleen is seldom increased in size at the beginning of the illness, but during convalescence it often becomes enlarged.

Against this clinical type of febrile jaundice which is the most frequent, we have observed a number of other varieties. The jaundice may appear during convalescence from an attack of febrile gastric derangement which had up to then presented no hepatic symptom. Or it may, on the contrary, precede the continuous fever by some days. The jaundice may be slight, betraying itself only by the modification of the mucus and urine, being accompanied by very marked symptoms of cholecystitis. It may, on the other hand, be intense, turning the skin a saffron colour, and the gall-bladder may be hardly painful at all. The stools are nearly always coloured during jaundice. But we have seen them sometimes colourless, secondarily, during the course of the jaundice. Fever must often be expected; the temperature rises to 38° or 39° C. during the two days of malaise before the jaundice, then it falls to the neighbourhood of normal when the skin becomes coloured. If the blood culture is practised from the first day, when nausea and fever appear, it is positive; as soon as jaundice is present it becomes negative.

At the end of August, when the epidemic was spreading over the whole peninsula, we had occasion to observe two cases of serious jaundice developing in 48 hours, with high fever and then hypothermia, purpura, hæmorrhage, and death. We performed a post-mortem examination on one of them, finding acute fatty degeneration of the liver, enlarged spleen, and visceral hæmorrhage.

CHART 2.



Daily figure (per 10,000 men of the French Expeditionary Force) of patients. —— treated for jaundice in the regimental infirmaries and ambulances; ═══ evacuated for jaundice.

Unfortunately, we had been unable to practise blood culture, and the culture from the bile of the corpse was sterile. In spite of this negative bacteriological result, we think, considering the etiological circumstances, we ought to include these cases in those of febrile jaundice of favourable prognosis which constitute the majority of the epidemic.

4. *Apyretic cases of jaundice* appeared synchronously with febrile cases of jaundice from the commencement of the epidemic. They could be observed during its whole course, and at the beginning of January amongst the French troops in Serbia arriving from Sedd-ul-Bahr the two forms persisted. Apyretic jaundice usually has an insidious start, but is progressive. The patient does not suffer from headache, insomnia, or curvature. He continues to do his duty, though suffering from general discomfort, anorexia, slight nausea, and sometimes marked asthenia. He gets chilly and very sensitive to changes of temperature at sunset. He often feels a weight in the right hypochondrium, epigastric obstruction, and a definite painful spot over the right breast at the level of the right shoulder. Sometimes these symptoms are absent, and the intense colouration of the urine and skin are the first symptoms to attract the patient's attention. Out of 55 cases observed of apyretic jaundice we found in 31 coloured stools; in 24 they were colourless. There are, besides, all variations between the plaster-like or gummy stools and the brown or dark-green ones. In several cases we noted, as previously observed in certain cases of febrile jaundice, first a normal colouration or even a bilious colouration, then several days after the appearance of the jaundice a colourlessness of the fæcal matter. The majority of patients were carefully questioned about pruritus, but we only observed one case of this. In these 55 recorded cases of apyretic jaundice we found only 34 clear hepatic and vesicular reactions: distension and sensitiveness of the liver, enlargement and sensibility of the gall-bladder, and resistance of the body wall at its level. The spleen for the most part was not enlarged, or enlarged only slightly, in the prolonged forms which last one month or more.

The course of the illness, which is always benign, is very variable in intensity and duration. Some patients only remained yellow from eight to ten days, and during that time were never incapacitated from duty. Others, on the contrary, were profoundly depressed and had to keep their beds for one month or more. Some cases of jaundice lasted for more than six weeks, leaving asthenia which necessitated evacuation from the peninsula. We have several times observed relapses, a fresh jaundice appearing from eight to 15 days after the total disappearance of all the symptoms of the first attack. The most important element of prognosis appeared to us to be the degree of enlargement of the gall-bladder, cholecystitis persisting for the most part long after the disappearance of the jaundice, lengthening convalescence for weeks, while those patients who do not present any such symptoms are completely cured sometimes in a week.

Urine.—We have been able to collect 202 analyses of urine from Sept. 21st to Dec. 24th from patients suffering from febrile gastric derangement and jaundice. These analyses were carried out with the greatest care by our friend the assistant pharmacist, Mr. Massy, in charge of the Dardanelles laboratory for chemical analysis. Urobilin was tested for by the Denigès process, pigments by the Grimbert reaction, and biliary salts by the Hay method. We noted the presence of albumin in 121 cases, i.e., 60 per cent.; of urobilin in appreciable quantities in 142 cases, i.e., 70 per cent.; of the biliary pigments in 132 cases, i.e., 65 per cent.; and of biliary salts in 70 cases, i.e., 34 per cent. The results are grouped in the following table, in which we have classified them in order of frequency.

Albumin.	Urobilin.	Biliary pigments.	Biliary salts.	Number of cases.	Albumin.	Urobilin.	Biliary pigments.	Biliary salts.	Number of cases.
+	+	+	+	35	+	0	0	0	7
+	+	+	0	34	0	0	0	0	7
0	+	0	0	24	0	+	0	+	6
0	+	+	0	20	+	0	0	+	4
+	+	0	0	18	0	+	+	+	4
0	0	+	0	13	0	0	+	+	3
+	0	+	0	12	0	0	0	+	3
+	0	+	+	11	+	+	0	+	1

One fact seems to us to deserve special attention. During the jaundice epidemic the febrile gastric derangements which were not accompanied by jaundice nearly all showed urobilinuria. In several cases we found even in the urine biliary pigments and salts, a fresh proof of the infection of the liver in those cases where we did not observe jaundice.

Bacteriology.—From June 10th to Dec. 20th we practised 606 blood cultures on bile and on liver peptone broth; 294 were positive. The germs were identified by various culture media—Endo, neutral

CHART 3.

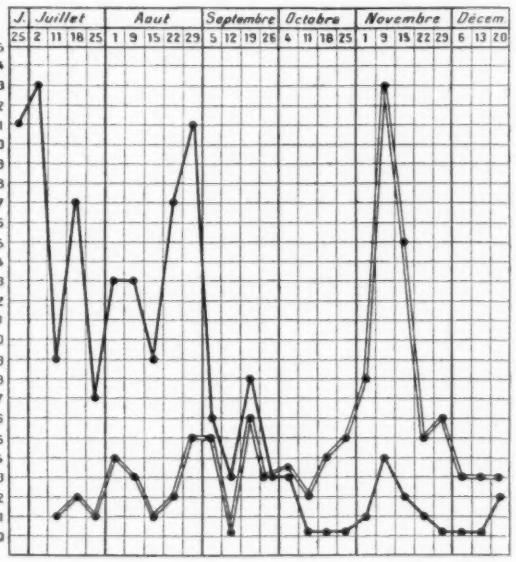


Table referring to the blood culture germs isolated at the Dardanelles from June 10th to Dec. 20th, 1915. Of 606 blood cultures 312 were negative and 294 positive. Of these 294 germs 182 were identified, including 35 typhoid and 147 paratyphoid B (Curve ———), 112 were atypical from their reactions upon the culture media and in presence of the experimental serums (Curve ———). Each point of the curves represents the number of germs isolated during a period of seven days.

red, lead agar, milk, the medium of Petruschky, and by the experimental serums antityphoid, antiparatyphoid A and antiparatyphoid B, furnished by the Pasteur Institute. During the first three months we only observed results according to text-books. Thus we isolated the typhoid bacillus on

30 occasions and paratyphoid B on 102, but no paratyphoid A. Towards the middle of August we were surprised by the appearance of atypical bacteria, which presented somewhat discordant reactions on lead agar and neutral red, and especially turned the Petruschky medium, whilst otherwise they behaved like paratyphoid B. The most striking thing is the non-agglutination of these germs by the experimental serums. We endeavour to explain the fact by the alteration of the serums during summer; but fresh ones sent from the Pasteur Institute acted like our old ones, while certain serums of patients behaved on these bacteria like the experimental serums obtained from animals, agglutinating them strongly by the method of microscopical examination.

If we compare the curve of the non-typical germs (Chart 3) to the clinical curve of the epidemic (Chart 1) we see that their appearance coincides with the appearance of the jaundice, and, in fact, in almost all our jaundice patients and those affected by febrile gastric derangement during the epidemic of jaundice we no longer find true typhoid bacilli and paratyphoid B, but we do find that variety of atypical germs which approaches sometimes the paratyphoid A, sometimes the paratyphoid B, but presents the characteristics which we have mentioned, in presence of serum reactions. We shall call them provisionally, for the sake of brevity, by the name of paratyphoid, species *Dardanellensis*, or species D.

We brought back to the Pasteur Institute, where they are in the possession of our master, M. Nicolle, and of our friend, M. Legroux, a certain number of our strongly agglutinating jaundice serums, and more than 100 specimens of species D. A rapid examination allowed the Pasteur Institute to repeat the reactions that we had obtained at Sedd-ul-Bahr, but the complete bacteriological study of these germs demands prolonged work and will form the subject of a later note. Nevertheless, a certain number of facts can already, we think, be deduced.

1. The characteristics of the germ cultures and of their serum reactions vary directly as the diminution in virulence of the epidemic and with the frequency of the hepatic localisations—cholecystitis and jaundice.

2. More than one-half of the blood cultures practised during the two first days of jaundice are positive.

3. The germs isolated in the febrile jaundice attacks and in the febrile gastric derangements without jaundice during the same period appear identical.

4. These germs seem to have a selective action upon the liver, but may give rise to clinical manifestations in other viscera; thus we have isolated in a state of purity a paratyphoid D from a purulent pleurisy with superficial necrosis of the lungs operated on in a case of febrile gastric derangement in November.

5. The species D was perhaps special to the French epidemic, for we were able to study four specimens of paratyphoid isolated from the British epidemic. The two first came from blood cultures effected in febrile jaundice attacks and are typical paratyphoid B. It is the same with a third isolated from the pus of a case of suppurative cholecystitis, and with a fourth isolated from the depth of the wall of an intestinal loop resected for perforation in a case of febrile gastric derangement without jaundice.

Globular resistance.—We have studied the globular resistance of our patients in 20 cases of febrile jaundice, 9 cases of febrile gastric derangement with cholecystitis unaccompanied by jaundice, and 4 cases of simple gastric derangement. The technique followed was that of Chauffard and Troisier, while, in addition, in almost all the cases the resistance of the red cells free from plasma, according to the technique of Widal and Abrami, was tested. Considering as normal the limit of hæmolysis with unwashed red corpuscles to vary between 0·40 and 0·49 we have obtained the following results: Reduction of resistance in 64 per cent., normal resistance in 33 per cent., and increased resistance in 3 per cent.

Camp jaundice always appears under the same conditions—tired troops confined for several weeks in a restricted space and tried by imperfect feeding and by unfavourable climatic conditions. In most cases it appears during an epidemic of febrile gastric derangements or else it follows the latter; more rarely it immediately precedes it.

We found conditions particularly favourable for studying the Dardanelles epidemic. Blood culture showed us that here was no mere coincidence, but that the jaundice was due to a hepatic localisation with a paratyphoid organism. This localisation depends upon complex causes, amongst which obstruction, temperature, diet, and previous history of diarrhœa doubtless play an important part, since, to our knowledge, no "camp jaundice" has yet been reported in the course of numerous epidemics of febrile gastric derangement on the French front.

It is remarkable that alongside of febrile forms where jaundice appears as a simple complication of septicæmia a large number of attenuated forms are observed in which the fever is of short duration, and even of forms completely apyretic which might be confounded with ordinary benign catarrhal jaundice, were it not for the epidemic conditions. The persistence of the colouration of the stools, the absence of pruritus, the albuminuria and urobilinuria associated with the elimination of the pigments through the urine, the diminution of the globular resistance, and the association of the affection of the gall-bladder and liver seemed to us the most interesting phenomena amongst those most frequently observed.

From the bacteriological point of view, we have assisted at a clear modification of the biological characteristics of the germs isolated by blood culture, coinciding with the appearance of the jaundice in the course of an epidemic of paratyphoid.

From the practical point of view blood culture may render the greatest service in establishing the diagnosis in suspicious cases where several cases of jaundice suddenly appear in a collection of men placed in the same conditions of existence.

The prophylaxis of camp jaundice seems to be confounded with that of the typhoid diseases: disinfection of the soil, sanitation of dwellings, the quality and variety of food appearing to play a part almost as important as that of the quality of the drinking water.

Possibly the employment upon a large scale of polyvalent vaccines will one day render paratyphoid infections and their hepatic complications as comparatively uncommon in the army as true typhoid is. But to attain this result it will doubtless be necessary to use vaccines of various origins: as the immunity conferred against typhoid, paratyphoid A, and paratyphoid B does not seem to give immunity against the species of paratyphoid D isolated by us at the Dardanelles.

PAIN IN RENAL AND VESICAL LESIONS:

ITS CHARACTERISTICS, ITS ANOMALIES, AND ITS MISGUIDING MANIFESTATIONS, WITH 12 ILLUSTRATIVE CASES.

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THE practical value of recognising the anomalies in the sensory symptoms produced in diseases of the urinary tract, as seen in everyday work, is well illustrated by the following case, which came under my observation many years ago, and at the time impressed me with the necessity of the greatest care in interpreting pain in visceral disease.

CASE 1.—*Symptoms and physical signs of appendicitis; history of four previous attacks; operation recommended; sudden pyuria raised suspicion of renal disease, which was confirmed by cystoscopic and X ray examinations. Operation for renal calculus relieves symptoms.*—Asked by his medical attendant to see a man, 24 years of age, suffering from appendicitis, I found the following condition. The patient was lying on his back with the knees well flexed and resting on a pillow; pulse 108, small; temperature 102° F. He complained of pain in the abdomen and down the right thigh, which he could not extend; constipation, sickness, and vomiting. The pain was most marked over McBurney's point and radiated upwards and inwards. On palpation there were distinct hardness and dullness on percussion over the right iliac region and increased resistance in the flank. The urine contained a trace of albumin, but no pus or blood. The patient stated that this was his fifth attack, and that a doctor whom he consulted in Ayr had strongly advised him to have an operation performed for appendicitis. Considering the circumstances, I willingly accepted the diagnosis of his medical attendant and had the patient removed to the Central Home. The following morning the temperature was 102°, pulse 98, and the urine was found to contain a moderate quantity of pus. With this new feature presenting itself I examined the patient under an anæsthetic, and found that the hardness in the front of the abdomen disappeared, and discovered the right kidney distinctly enlarged. A cystoscopic examination was then made and pus was seen escaping from the right ureter, the orifice of which was much dilated. On an X ray plate being taken by Mr. James R. Riddell, the shadow of a large, smooth, uric acid stone was found and I removed it three days later. There was no recurrence of the symptoms, and the patient stated that at no time during the last or in the four previous attacks had he any pain in the small of the back.

To the patient pain is the first signal that something is wrong, and he naturally infers that the pain is situated over the focus of the disease. In this he is often misled, because in the urinary tract, as in other viscera, referred pain may be situated over spots of the body which bear no relationship to the position of the disease.

Fortunately, the surgeon does not depend upon sensory impressions but upon physical signs for his ultimate diagnosis, otherwise he also would constantly be led to false conclusions. Even with the knowledge we have of referred pain, in many cases valuable time is lost, because in practice the fact is not fully recognised that deep-seated disease may give rise to superficial or to referred pain along the course of the peripheral nerve, which has its origin in common with the nerves supplying the diseased organ or the parts in its immediate neighbourhood. So we find that diseases in the urinary tract have been mistaken for lumbago, appendicitis, perityphlitis, pleurisy, lumbar abscess, or spinal disease. Pain is the patient's only guide, and if it is located in the hip, the thigh, or the knee he naturally associates the cause of his suffering with these parts. Hence mistakes are easily made and are very common.

The pain in some instances is so mysterious and misguiding that unless the most careful physical methods at our command are employed errors may occur in diagnosis. By physical methods, as a rule, little difficulty is experienced in locating the situation, in estimating the extent and in proving the nature of the lesion. There is, however, a certain proportion of cases, a larger number than is generally supposed, where not one but all our means of inquiry must be employed before a full and accurate diagnosis can be arrived at. This is due to a large extent to the circumstance that in many instances the characteristic symptoms and physical signs are wanting, while, on the other hand, lesions in other organs may mimic the symptoms of disease in the urinary tract. The differential diagnosis of the cause of pain is complicated. This is seen in other parts, in the ear, in disease in the larynx, in the knee, in hip-joint disease, in the appendicial region, in pneumonia, at the base of the lung in appendicitis, or in the testicle in renal disease. The last is well explained by Sir James MacKenzie,[1] who says:—

> The reasons why the pain is referred to portions of the body so far apart is because in the course of development the tissues that in a low scale of life immediately covered the organ have been displaced. Thus, the pain felt in the testicle in renal colic is due to the fact that in its journey down to the scrotum the coverings of the testicle receive a twig from the first lumbar nerve, and when the root of this nerve is stimulated, as in renal colic, the pain radiates to the testicle. In renal colic one never finds the skin of the scrotum hyperalgesic, but always the deep covering of the testicle, because the scrotum is supplied by the sacral nerves.

We may now consider the nerve-supply of the urinary tract. The whole apparatus is extra-peritoneal and in immediate contact with the parietes, the nerve-supply of which is cerebro-spinal. This may be a reason why in diseases of these organs the pain is so diffuse in its manifestations. According to Head the cerebro-spinal nerves which supply the kidney and the upper part of the ureter are derived from the tenth, eleventh, and twelfth dorsal segments of the cord, while the lower end of the ureter is supplied from the first lumbar segment and probably a few filaments from the vesical plexus. The bladder has its sensory nerves from the second, third, and fourth sacral segments, but when the bladder is distended impressions are probably conveyed through the eleventh and twelfth dorsal and the first lumbar segments.

The sympathetic nerves supplying the parenchyma are abundant and are derived from the renal plexus, which proceeds from the solar plexus and the lesser splanchnic nerves, and through the aortic plexus they communicate with branches of nerves which are distributed to the testicle in the male and the ovaries in the female, and also with branches derived from the pelvic plexus.

The renal plexuses lie close to the renal arteries. The nerves, both sensory and motor, enter the hilum and form a network which accompany and supply the affluent arterioles of the glomeruli, then passing to the convoluted tubules and the straight tubules, they perforate the basement membrane and end free between the cells. Delicate fibres continue to, and end in, the epithelium of the papillæ and the mucous membrane of the pelvis.

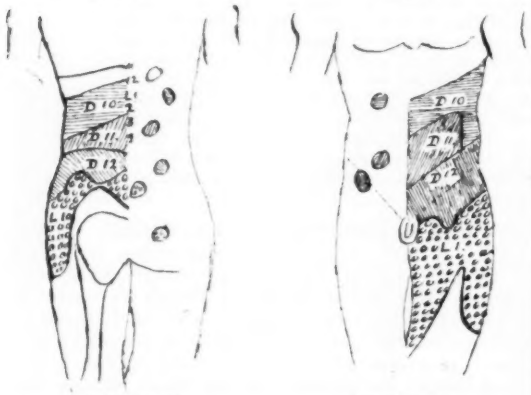
[1] Brit. Med. Jour., 1903, vol. i., p. 1524.

We may now indicate the segmental cutaneous areas with the spots of maximum tenderness and pain, and afterwards we will see how they correspond with the distribution of pain in the various lesions in the urinary organs.

Experience seems to show that the parenchyma of the kidneys is insensitive to stimuli to produce pain in the organ itself, although they may induce excruciating suffering in the area of distribution of those sensory somatic fibres taking origin from the same spinal segment as the renal sensory fibres. The mucous membrane of the pelvis and the capsule of the kidney, however, are very sensitive to all kinds of stimuli, which manifest themselves by local pain.

Figs. 1 and 2 show, on the left side of the body, the cutaneous areas corresponding to the various segments of the cord, and on the right side the spots of greatest tenderness or of pain. The eleventh and twelfth dorsal nerves send nerves directly to the kidney which penetrate the capsule in the upper third of the organ. From the first lumbar ganglion the iliohypogastric supplies the pubic region, while the ilio-inguinal nerve passes to the base of the scrotum and penis, the mons

FIG. 1. FIG. 2.



Posterior view. Anterior view.

Showing Head's areas of reflected hyperalgesia in the tenth, eleventh, and twelfth dorsal and the first lumbar segments. These are involved in lesions of the kidney and ureter.

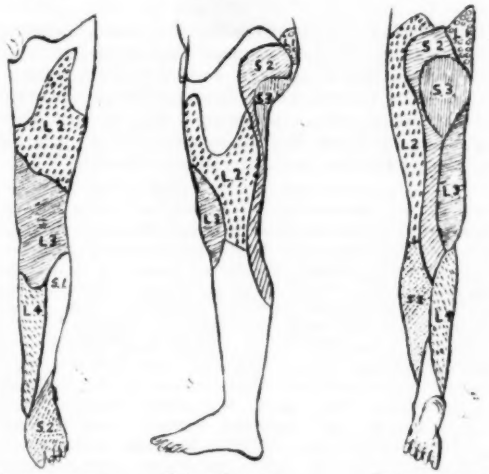
veneris and labia majora, the upper and inner part of the thigh, and the pubic region. The outer side of the thigh is supplied by the external cutaneous, while the anterior and inner surface of the thigh and leg are supplied by the genito-crural and the anterior crural.

It is the areas included in the eleventh and twelfth dorsal and the first lumbar zones that are usually associated with renal lesions.

The bladder receives its sensory supply from the second, third, and fourth sacral segments, which, with filaments from the hypogastric, unite to form the vesical plexus. The eleventh and twelfth dorsal and the first lumbar also contribute. The sympathetic nerves derived from the vesical plexus follow the arteries and are distributed chiefly to the muscular wall. The areas most affected in vesical lesions are those governed by the second, third, and fourth sacral zones, those supplied by the lumbar nerves are seldom involved in the pain, although Head says that "where there is distension of the bladder, and ineffectual attempts are made by the patient to evacuate, the pain is of a sharp, shooting character, radiating from the lower lumbar and sacral regions behind, around the ilium to the lower part of the abdomen just above the pubes, and also down the inner side of the thigh to the knee."

The distribution of the fourth lumbar, the third and fourth sacral—namely, the perineum, the hips, the scrotum, and down the back of the thigh—are the situations most associated with pain in the bladder diseases, but it may also extend to the

FIG. 3. FIG. 4. FIG. 5.



Anterior aspect. External aspect. Posterior aspect.

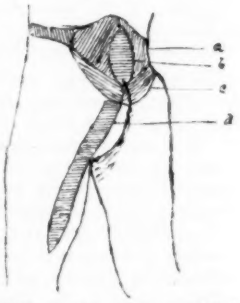
Showing the pain areas, the second, third, and fourth lumbar and the first, second, and third sacral.

outside of the leg and of the foot, the areas supplied by the external cutaneous and posterior tibial nerves. (Figs. 3, 4, 5, and 6.)

The Primary Causes of Pain in Diseases of the Kidney and Ureters.

For diagnostic purposes it should be remembered that renal pain may be due to one of the following causes: (*a*) Obstruction to the exit of the urine from the pelvis, such as a stone in the ureter, kinking of the ureter, the formation of a valve which closes its mouth, tumour pressing upon the vesical orifice, or thickening of the walls of the ureter in septic and tuberculous disease; (*b*) the presence of a foreign body, a tumour, or an inflammatory lesion in the pelvis; (*c*) sudden increase in the tension of the kidney, either by an increase in the blood pressure or by the formation of a new material in the renal parenchyma leading to increase in bulk of the organ and distension of the capsule, such as venous distension, renal strangulation, acute septic and tuberculous disease, tumours, &c.; (*d*) traction upon the nerves by displacement of the kidney, by increase in its bulk, or by pressure upon the nerves in its vicinity; and (*e*) thickening and rigidity of the fibrous capsule or of the perinephric tissue.

FIG. 6.



Head's pain areas associated with disease in the bladder, prostate, and kidney. Shows the areas of reflected pain in (*a*) renal disease; (*b*) disease of the prostate, seminal vesicles, and sexual excess; (*c*) and (*d*) diseases involving the prostate and base of the bladder.

The parenchyma of the kidney is not very sensitive, as serious lesions may occupy the

substance of the organ without giving rise to pain so long as the increase in bulk is gradual, but if there be any irritation of the pelvis or a sudden increase in the intracapsular tension pain at once shows itself. Examples are numerous: in chronic hydronephrosis, in slow tuberculous infiltration of the parenchyma, and in cystic degeneration, for a long period there may be little or no suffering, whereas pain is immediate in sudden obstruction to the flow of urine, as in calculus impacted in the ureter, torsion of the pedicle in movable kidney, or plugging of the ureter with blood clot.

I. *Local Pain.*

In diseases of the kidney the pain may be local—that is to say, limited to the renal region—or it may be referred. The renal region viewed from the front is within the following limits:—

At the level of the umbilicus draw a horizontal line, and at right angles to it draw a line from the middle of Poupart's ligament; the point of intersection will correspond to the middle of the lower pole of the kidney. Or draw a perpendicular line from the ensiform cartilage to the symphysis pubis, and at right angles to it draw a horizontal line at the umbilicus. On the horizontal line fix two points, one on the right side and the other on the left, 4 inches from the middle line, and from these points draw upwards two perpendiculars, 4 inches long, parallel to the middle line. Unite the upper extremities of these lines by a second horizontal line. Both kidneys will be included within this quadrangular space.

On the posterior surface of the body the boundaries may be fixed as follows: Draw a horizontal line on a level with the highest point of the spinous process of the eleventh dorsal vertebra, and a second line at the lower edge of the spinous process of the third lumbar vertebra. Let these lines extend 3½ inches to right and left of the middle line, and join their extremities by two perpendicular lines; both kidneys will be within the space so marked.

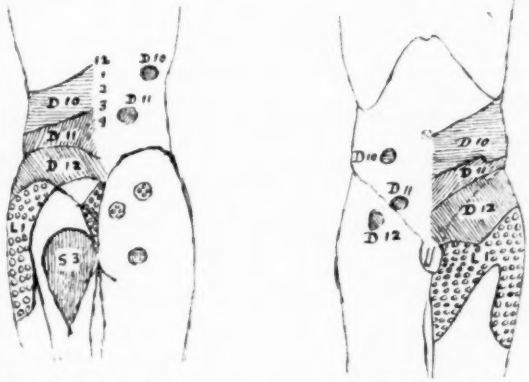
This area is included within the tenth, eleventh, and twelfth cord zones. It may be looked upon as the proper limits of renal pain, and when the irritation extends beyond these zones it may be classified under referred pain. For example, when the pain is felt in the renal area, and especially when it is associated with tenderness on pressure, a perinephric lesion should be suspected. Seeing that the nerve-supply of the kidney is intimately related to that of other organs, irritation originating in the urinary tract is very liable to be referred to the bladder, the urethra, the ovaries, or the gastro-intestinal tract. And likewise in diseased conditions of these organs the pain may be referred to the kidney region.

It may be well in the first instance to picture a typical example of renal pain, and afterwards to show how pain may extend to distant organs and remote parts.

In renal disease the deep-seated pain is located immediately below the costal margin in the angle formed by the margin of the erector spinæ and the last rib, with the area of greatest intensity close to the point of the last rib, and extends particularly to the field of the tenth, and to a lesser extent to the tract of the eleventh and twelfth dorsal and the first lumbar segments. (Figs. 1 and 2. Also Figs. 7 and 8.)

The feeling may only amount to a sense of uneasiness or discomfort; it may be a dull or gnawing pain, it may be very acute at times, or may reach to a degree to be described as lacerating torture, accompanied by agonising spasms. The suffering may be of short duration, with intervals of complete freedom from pain, or it may be persistent. The less severe pains, as a rule, continue steadily in their course and are located in one place, while the more acute pains are generally remittent and extend over considerable and constantly varying areas. Dull persistent pain in most cases indicates a slow, steady change in the condition and the bulk of the renal parenchyma or in the size of the pelvis, as is seen in tuberculous nephritis and in tumours; on the other hand, acute

FIG. 7. FIG. 8.



Posterior view. Anterior view.

Showing Head's zones of hyperalgesia associated with renal disease. On the left side the areas are shown, and on the right side the points of maximal tenderness.

suffering is due to lesions which suddenly interfere with the exit of urine from the pelvis—for example, in calculus, in tuberculous pyelitis, or ureteritis, or in obstruction from the impaction of a blood clot.

During an attack of renal colic the pain generally extends over a wide area, involving most of the abdomen and back. But while widely distributed it is generally most severe on the affected side, between the level of the tenth rib and the crest of the ilium. Its character and situation vary according to circumstances and may often guide the surgeon in forming an opinion as to the nature of the lesion giving rise to the suffering. When obstruction to the ureter is present the pain may extend down the thigh to the knee, involving all the pain areas from the tenth dorsal to the second lumbar, whereas when a stone is impacted in the kidney it will cause little suffering when the patient is at rest, but when he exerts himself or is submitted to sudden jolting pain is developed in the ninth and tenth dorsal areas.

II. *Referred and Reflex Pain.*

Referred pain in kidney disease may be felt in, and in some instances limited to, a district far apart from the situation where the irritation is produced. It may be conveyed downwards to the areas supplied by the genito-crural, the external cutaneous, the middle cutaneous, the internal cutaneous, and the obturator nerves. Or, on the other hand, the pain may be limited to the lower part of the trunk. These reflex pains may be classified: (*a*) reno-reflex; (*b*) reno-urethral; (*c*) reno-vesical; (*d*) reno-testicular; (*e*) reno-ureteral; (*f*) reno-ovarian; and (*g*) gastro-intestinal.

(*a*) *Reno-reflex pain* is by far the most important of the misguiding reflexes, and unless due care be taken may result in a surgical disaster. As a rule the pain is chiefly on the side of the diseased organ, but in a certain proportion of cases it also extends to the healthy side; less commonly the pain may be limited to the healthy side.

The first writer to direct attention to the subject was Prout,[2] who says, "I have seen, for instance, the whole pain and uneasiness referred to the side *opposite* to that in which the disease lay; and I have actually known more than once a seton applied over the sound kidney." J. Knowsley Thornton[3] supports the same view. He says: "It must be borne in mind, however, that most of these symptoms may be present in a case in which no stone can be found, and they may be marked and constantly referred to one side, while the stone is in the kidney on the opposite side." Guyon also attached considerable importance to reno-reflex pain.

This reno-renal reflex is apt to be misleading, and in order that mistakes may be avoided the transference of pain from the diseased to the healthy side must be remembered and given its due weight. As remarked by Behan[4]:

Many a tragedy of surgery has occurred because the surgeon is ignorant of this phenomenon. In all cases of suspected kidney disorder the attending physician and, most of all, the surgeon should not rely too much upon the character of the symptoms to define the kidney affection.

Urologists have until lately paid too little attention to referred pain and reflected pain, and some seem to ignore it. It has been fully recognised in renal calculus when the pain is acute that it is not always referred to the seat of the disease, and may cause spasm of the bladder, pain in the testicle at the point of the penis, in the hip-joint or down the thighs, but that the suffering may be limited to the kidney on the opposite side to the one that is the seat of the disease has not been so generally accepted.

Morris, in his "Surgical Diseases of the Kidney and Ureter" (vol. ii., p. 84), says:—

It is important to know that a stone in one kidney will sometimes excite sympathetic pain and irritation in the other; but this transferred or sympathetic pain is of an aching character, not of a spasmodic or colicky description, is only occasional, and never occurs except as an accompaniment of more severe pain on the affected side.

So far as my own experience and researches go, there is not a single case which affords satisfactory evidence of symptoms on one side only being caused by a stone in the kidney of the other side. The presence of a stone in the painless kidney is not proof that the painful opposite organ is not also affected. That the attacks on the painful side have ceased after removing a calculus from the painless kidney is not conclusive; this may be nothing more than a coincidence, due either to the accidental shifting of a calculus in the painful kidney, or to the calculus becoming lodged in some immovable manner. There may be very advanced disease of the kidney on the painful side, and a symptomless calculus in the opposite kidney. In a case which has been under my care of late there was a sarcomatous growth in the right kidney with hæmaturia, but an entire absence of pain and tumour on the right side, throughout the whole course of the disease; yet intense pain was experienced in the left renal region radiating over the left side only. The inference would have been that this was a typical case of reno-renal reflex pain had not symptoms during the last few weeks of life and a post-mortem examination shown that the left-sided pain was due to a similar new growth involving the left transverse processes and the left side of the bodies of the lower dorsal vertebræ. I consider the doctrine of reno-renal reflex with an absence of pain in the affected kidney as unproved and unsound, and if acted upon in practice likely to lead to very serious and dangerous results.

On the other hand, the experience of the writer, corroborated by the more recent authorities on urology, demonstrates that reno-renal reflex pain is a fact which must be accepted.

A very interesting case is reported by Mr. Edmund Owen,[5] in which the pain was limited to the right side. The right kidney was explored with a negative result, and at a subsequent operation a large phosphatic calculus (400 grains) was removed from the left kidney. Commenting upon the case, the author remarks:—

I am well aware that it is not a very unusual occurrence for a surgeon to operate upon the wrong kidney in his search for a stone; but I do not think that a more conspicuous instance than this, of the untrustworthiness of the subjective symptom of pain in renal calculus, is likely to be forthcoming. Subjective signs are proverbially untrustworthy through the whole range of surgery; but in the case of the kidneys, which have drawn their nerves blindfold from the epigastric pool, it is small wonder if, in the absence of objective signs, patient and surgeon are sometimes led by them to make mistakes.

In an article in THE LANCET,[6] I drew attention to cases in which the symptom pointed to the sound kidney being the diseased one, in which I said:—

The first case of this kind which came under our observation was one of repeated attacks of renal colic, limited to the left side, and accompanied by hæmaturia from the right ureter only. The attacks were usually brought on by active exercise or by driving, and were accompanied or succeeded by hæmaturia which usually lasted for some days after the pain had passed away. The patient was sent into the "Central Home" during one of these attacks, and on examination with the cystoscope blood was seen to flow from the right ureter only. This was observed on several occasions, and I advised an exploration of the right kidney, but the patient was so convinced that the disease was on the left side that he would not consent to an operation being done. This was in 1899. Since then I have seen four other cases, and in one which I operated upon the patient was very reluctant to submit to an exploration of the kidney, which was free from pain, and contended for some months against operative interference, but when he was told that the blood came persistently from what was believed by him to be the sound kidney, and that every X ray photograph plate taken showed the shadow of a stone in the pelvis of the kidney, he ultimately gave in and we removed the calculus, followed by complete cessation of the pain in the opposite side.

Two other cases almost exactly similar I have operated upon since then, both patients in the Glasgow Royal Infirmary. The following is an account of one.

CASE 2. *Calculus forming cast of pelvis of right kidney; hæmaturia; pain limited from onset to left lumbar region; pus from right ureter only; X ray shadow on right side. Removal of stone followed by relief of pain.*—The patient, aged 67, was admitted to the Glasgow Royal Infirmary suffering from pain in the left lumbar region. This pain appeared first 18 years ago, when he had an attack of acute renal colic, the pain being limited to the region of the left kidney, accompanied by hæmaturia and frequency of micturition. From that time (1896) until the beginning of 1914 he was free from suffering. After doing a full day's work, at night he was seized with severe pain in the left lumbar region, so severe as to induce vomiting, and this condition lasted for about one hour and a half and then suddenly passed off, after which he passed a considerable quantity of blood. These attacks were repeated on several occasions, and gradually the pain and tenderness in the left lumbar region became more continuous and frequency of micturition was complained of, eight times during the day and three times during the night. In bed every time he turned over he experienced pain in the left side of the back. The urine was normal with the exception of containing a little pus and albumin; no blood or sugar. Palpation revealed nothing further than a slight increased resistance in both renal regions in front and behind, but firm pressure on either side caused pain in the left lumbar region.

[2] Stomach and Urinary Diseases, 1840, p. 354, footnote.
[3] Harveian Lectures, 1889, p. 26.
[4] Pain, its Origin, Conduction, Perception, and Diagnostic Significance. London, 1914, p. 663.
[5] Brit. Med. Jour., June 8th, 1901, p. 1385.
[6] THE LANCET, 1904, vol. i., p. 1111.

Cystoscopic examination showed the right ureter opening retracted, the margins were thickened and injected, and pus was seen escaping at intervals; left ureter opening was normal.

In view of the results of the cystoscopic examination doubt was raised as to the condition of the right kidney, and an X ray plate was taken by Dr. J. Riddell, when a distinct shadow was seen in the region of the pelvis of the right kidney. A second plate gave the same result.

August 31st, 1914: "Dr. Newman cut down on the right kidney and removed a large irregular stone from the pelvis. The stone was 2 inches long and was a cast of the pelvis." The patient made a good recovery and the pain disappeared from the left lumbar region.

Another case may be mentioned which was under treatment a few weeks earlier than the one just described:—

CASE 3. *Calcified gland in front of renal pelvis; shadow simulating renal calculus on left side; pain on right side increased by exercise, relieved by rest; pyuria; ureter openings normal; exploration.*—The patient, who was in indifferent health, was admitted to the Regent Home suffering from pain in the right lumbar region. The attacks were never very severe, but were generally followed by the escape of a moderate quantity of pus. The pain was increased by exercise and relieved by rest, but was never associated with hæmaturia. These continued during three years at longer or shorter intervals varying from a fortnight to four months. The urine was normal with the exception that it occasionally deposited pus and oxalate of lime. Palpation of the lumbar region showed the left kidney to be a little larger than the right, but there was no great tenderness on either side. Cystoscopic examination showed slight catarrh of the bladder and the orifices of the ureters to be normal; but on an X ray plate being taken a distinct shadow was found on the left side just outside the point of the second lumbar transverse process. A second plate gave the same shadow; it was triangular in shape and covered about half of a square inch, the square being divided by a line from opposing angles. Exploration of the kidney failed to discover a stone, but the hilum was firmly adherent in front, and within the peritoneum there was a large calcified lymphatic gland. By reason of the general health of the patient being poor his recovery was slow.

This case so closely resembled some of those of reno-reflex renal pain that the symptoms, and especially the occasional pyuria and the X ray shadow, led to an exploration being made, but the absence of any changes in the appearance of the orifice of the corresponding ureter opening was distinctly against the presence of a stone.

(*b*) *Reno-urethral*, (*c*) *reno-vesical*, (*d*) *reno-testicular*, and (*e*) *reno-ureteral*.—The kidneys are most intimately connected physiologically with the urinary bladder, which anatomically may be regarded as simply an expansion of the lower ends of the ureters; all the elements—the mucous lining, the muscular coat, the nerves, the blood-vessels, and the lymphatics—being continuous. It is little wonder, then, that in renal disease suffering is frequently referred to the bladder; indeed, in some cases the bladder irritation may be the only symptom complained of. Such reno-urethral, reno-vesical, and reno-testicular reflex pains are well-recognised manifestations of lesions in the parenchyma or in the pelvis of the kidney. Attention would not be called to them in detail were it not that on many occasions, on account of the pain being referred by the patient only to the bladder or the penis, the question of the presence of a disease in the kidney had been overlooked, and the patient is sent to the surgeon as a case of cystitis or of stone in the bladder.

The systematic use of the cystoscope has shown us how frequently in cases diagnosed as cystitis and stone the bladder is healthy, the pain and the frequent micturition being due to reflex influences. These symptoms require very careful attention, and the cystoscope will alone save us from many and serious errors.

In cases of renal calculus and also in tuberculous disease of the kidney, the urethra may be the seat of pain, although itself quite free from disease. This is a common cause of frequent micturition in those conditions, and is apt to be misunderstood. The burning sensation may be almost continuous, is not aggravated nor relieved by micturition, and is not increased by pressing the walls of the urethra together. Occasionally spasm of the neck of the bladder may lead to the mistaken diagnosis of stricture.

CASE 4. *Small oxalate of lime stone at lower pole of left kidney; principal symptoms urethral irritation; spasm; nocturnal incontinence; slight pyuria; pain attributed to lumbago; X ray shadow; nephrolithotomy; cure.*—The patient, aged 39, was advised to consult me on account of pain in the urethra and occasional difficulty in passing urine, with pyuria. He stated that he had been treated for lumbago for over three years, and that the pain in the urethra had been present more or less during the last six months, and was associated with frequent micturition (seven times during the day and six times during the night). It was the frequent rising at night that concerned him as it interfered with his sleep, and he often had nocturnal incontinence. He admitted having gonorrhœa in 1902, but although he had been perfectly well since then he feared there might be a stricture. There was no history of hæmaturia, and the deposit of pus, due to bacillus coli infection, was always very small in amount.

A full-sized bougie passed without undue discomfort. A cystoscopic examination showed the bladder to be normal, but the orifice of the left ureter was dilated, round, and did not contract fully between the shoots. The right orifice was normal. Shoots 18 from the left ureter and 11 from the right in five minutes. The urine from the left ureter was slightly cloudy, that from the right clear. No change from the normal could be discovered in the appearance of the mucous membrane of the urethra. Urine contained pus and oxalate of lime. Palpation of the kidneys was not easy on account of the thickness of the parietes. An X ray plate taken by Dr. Riddell revealed a shadow in the region of the left kidney.

A small irregularly shaped stone was removed from the lower pole of the left kidney. The patient made a good and rapid recovery, and the urethral irritation and frequency of micturition disappeared.

A good example of reno-vesical reflex was published for the writer in THE LANCET[7] of which this is the epitome:—

CASE 5. *At first diagnosed as acute cystitis; history of excessive irritation at the neck of the bladder; constant pyuria, occasional hæmaturia, and absence of lumbar pain; very frequent and painful micturition; no vesical calculus and no tubercle bacilli in urine; cystoscope revealed blood escaping from the right ureter only and slight hyperæmia of the bladder; X rays showed a shadow in the right kidney; phosphatic stone removed; relief of symptoms.*—When examined the patient complained only of pain and frequency in micturition and referred the pain entirely to the neck of the bladder. She passed urine at intervals of half an hour, and except while asleep seldom retained more than an ounce. There was no spontaneous pain in the renal region. The patient consulted several eminent surgeons, and, judging from the symptoms, they all concluded that the disease from which she was suffering was acute cystitis, and this was supported by absence of pain in the lumbar region. We therefore explored the bladder with the cystoscope during a hæmaturia and found the blood to be of renal origin. The appearance of the mouth of the ureter also aroused suspicion, and an X ray photograph being taken the diagnosis was completed. A phosphatic stone was removed and the symptoms relieved.

CASE 6. *Frequency in micturition, slight hæmaturia, and pronounced testicular pain; testicle normal; no renal pain;*

[7] THE LANCET, vol. i., 1909, p. 10.

no shadow; no tubercle bacilli found in early stage. Later pyuria, tubercle bacilli. Nephrectomy; symptoms disappear.—Early in September, 1909, the patient noticed that he had to rise during the night more frequently than usual, and in the following December he consulted his medical attendant on account of the appearance of a small quantity of blood in the urine. For this he was ordered to bed; treatment was prescribed, and the hæmaturia disappeared at the end of a week. Between that time and July, 1910, when he consulted me, the frequency in micturition had increased to six or eight times, and during the day an hour and a half was as long as he could wait. There was no pain during or after micturition. But what he most complained of was a constant pain in the right testicle which was worst at night and prevented sleep. There was no recurrence of hæmaturia; the urine was clear; specific gravity 1008, acid, and threw down a very slight deposit on standing. The patient was tall, thin, and anæmic, so that the abdominal organs could be easily palpated. The testicles and the cord were strictly normal, but when pressed the right testicle was very tender. Nothing found on rectal examination. The patient never complained of spontaneous pain in the renal regions, but on palpation some enlargement of the right kidney was discovered, and he said that pressure on the kidney made him feel sick and made the testicle more painful. When he lay upon his left side the pain was eased.

Cystoscopic examination showed the bladder to be free from disease except that the orifice of the right ureter was unduly prominent and the lips thickened. Palliative treatment was prescribed, but I had a strong suspicion that the right kidney was the cause of the trouble. No shadow; no tubercle bacilli found.

In December of the same year the patient reported himself and said that he had had some bleeding and a thick deposit in the urine for over a week. Bacteriological examination and inoculations made by Dr. R. W. Buchanan now proved the presence of tubercle bacilli in the urine. Otherwise the symptoms and physical signs remained the same, except that the kidney was more distinctly felt. The right kidney was explored; a moderate-sized tuberculous focus was found in the lower pole, and three small ones in the body of the organ. It was removed, and the pain in the right testicle and the frequency in micturition disappeared.

In tuberculous disease of the kidney reno-testicular pain is sometimes present, the pain being independent of any testicular lesion, and relieved completely by removal of the kidney. It is well that this should be recognised, as tuberculous involvement of a testicle is likely to mitigate an operation on the kidney. It is well known that in renal calculus pain may be limited to a testicle, and sometimes it is so severe that removal of the testicle has been advised.[5] This reflex is easily understood when it is remembered that the testicles receive their nerve-supply from the same segment of the cord as do the kidneys.

(*f*) *Reno-ovarian* and (*g*) *reno-gastro-intestinal reflexes.*—Lesions of pelvic organs are very frequent causes of pain in the back in women, which is increased by exertion. It often follows the posterior divisions of the first lumbar nerves, and in this way it is liable to be mistaken for pain of renal origin. The body of the uterus is supplied by the tenth, eleventh, and twelfth dorsal segments, the ovary by the tenth, and the Fallopian tubes by the eleventh, the twelfth, and the first lumbar, so that when these structures are implicated pain manifests itself very much in the same situations as in kidney disease. Hence the great difficulty when both the urinary and the genital organs are involved to discriminate the true origin of the suffering.

In kidney disease pain is very seldom reflected to the uterus, but is very commonly referred to the region of the ovary, as can be seen frequently in cases of movable kidney. Instances are not uncommon where the pain over the region of the ovary was so severe and persistent that the medical attendant suspected ovarian rather than renal disease, and not a few have come under my notice where the pains have been mistaken for that of appendicitis.

In most of the surgical diseases of the kidney gastro-intestinal symptoms develop, but these are most marked in movable kidney. Many attempts have been made to explain the relationship between the gastro-intestinal symptoms and the displacement of the kidney. The disorders of digestion, the distension of the bowel and stomach, the sickness and the vomiting have all been attributed to reflex disturbance of the nervous system from dragging upon the renal nerve.

The neurotic symptoms are manifested by hyperæsthesia, acute neuralgia, and in a few by what may be included under the term "reflex cramp." In many the abdomen is extremely sensitive to touch, and when the kidney is manipulated even gently the patient complains of pain out of all proportion to the force used. This pain is increased by movement, by standing in the erect posture, but when the patient is kept in bed for a few days hyperæsthesia becomes less marked.

(To be continued.)

[5] THE LANCET, vol. i., 1909, p. 11, Case 4.

A SPLINT FOR A FRACTURED HUMERUS.

BY COLIN MACKENZIE, M.A., M.D.,
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CAPTAIN, R.A.M.C. (T.C.).

THE splint now described is one which should be of practical value in casualty clearing stations. There it is of great importance to be able to dress any compound fracture of the humerus immediately prior to evacuation, consequently without anæsthesia, but with the minimum of pain. This is possible if the limb remains fixed and the splint is not moved during the dressing. As the Page splint has proved so useful for cases of fractured femur, I have modified it so that it may be applied to the arm.

It is obvious that if the fixed point of the upper end of the splint was against the axilla there would be a possibility of pressure of vessels—a state of affairs very undesirable where the wound may be already infected with gas-forming organisms. The fixed point of the upper end of the splint is above the shoulder, and is kept in contact with the acromial process by two straps. The chief difficulty in making the splint was the weakness of the shoulder portion. This was remedied by making the upper part of the splint with one piece of standard aluminium splinting, and I am indebted to Sergeant-Major Scott-Badcock, R.A.M.C., for the suggestion of the curve over the anterior aspect of the shoulder described later. Staff-Sergeant Lee, R.A.M.C., made various models on these lines, and I am greatly indebted to him for the interest and trouble he took in making them.

I will now briefly describe the method of making the splint from the standard aluminium splinting. The accompanying illustrations will render the method easier to understand.

To make the upper half of the splint (see Fig. I.). Take a full length of aluminium splinting (20 rings). (*a*) Bend on the *edge* at the middle point (x in 1 and 2) to a right angle. (*b*) If it is desired to make a splint for the left arm, bend on the *flat* the first six-ring length of the right-handed limb

(holding the splinting with the angle towards one and the rings uppermost—x A in the diagram) in a semicircle directed upwards, so that the sixth ring is on the same plane as the left-handed limb (x B). (*e*) Now twist the remaining four-ring length portion of the right limb with pincers through a right angle so that its *edge* is now in the same plane as the *flat* of the semicircular portion (Fig. I., 3). (*f*) Bend on the *flat* in a gentle curve the first six-ring portion of the left limb (x B) so that the lower four-ring portion is opposite the lower four-ring portion of the right limb (Fig. I., 4). The upper portion is now completed, except for

FIG. I.

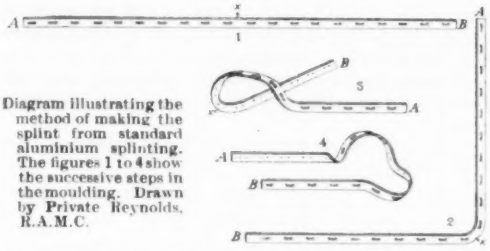

Diagram illustrating the method of making the splint from standard aluminium splinting. The figures 1 to 4 show the successive steps in the moulding. Drawn by Private Reynolds, R.A.M.C.

padding round the curved parts. If the splint is required for the right arm, substitute left for right and *vice versa* in the above description in steps 2, 3, and 4.

To make the lower half of the splint.—Take a 17-ring length of the splinting and bend on the *flat* at right angles just after the eighth ring. Bend again on the *flat* at right angles just beyond the ninth ring. The result is a U-shaped half (which should have the rings external). A step should be mounted to this half as in the lower portion of the Page splint. The two portions are assembled in exactly the same method as the Page splint, three or four rings being bolted together, according to the length of arm of the patient. The step should look in the opposite direction to the semicircular portion of the upper part of the splint.

Method of application.—It is better applied when the patient is under an anæsthetic, as when the wound is cleaned and dressed for the first time at a clearing station, but it can be applied without an anæsthetic and without causing very much pain. The arm is held in the extended position by traction on the forearm and slipped through the splint, which is held so that the semicircular portion is anterior and internal to the limb. This semicircular portion is now brought to be over the anterior aspect of the shoulder, and so that

FIG. II.

Shows the splint applied. Note the straps 1 and 2 which secure fixation of the point x. The photograph was taken by Captain McNee, R.A.M.C. (S R.)

the extended arm lies between and in the same plane as the straight bars of the splint. The splint is fastened by a strap which passes round the chest (below the opposite axilla) from the point x on the diagram; this point is also fixed by a strap to a strap round the patient's waist. The arm is kept in a state of moderate extension by fixing the wrist to the distal end of the splint by means of a flannel bandage, or a stirrup made with Mead's strapping. Strips of flannel or perforated zinc passed beneath the arm and forearm from one side of the splint to the other form a support for the limb. Fig. II. shows the splint applied to the left arm.

Advantages of the splint.—1. It is easily made and applied. 2. It ensures fixation of the limb without pressure from the splint on either the limb or on the vessels of the axilla. 3. If the lower end of the splint be supported the patient can turn on his side without pain, thus facilitating dressing of other wounds and nursing. The relative position of the arm to the patient can be changed if he so desires, and the arm may be freely abducted for purposes of dressing. 4. The wound can be dressed without removal of the splint. 5. The maintenance of moderate extension ensures free drainage.

Possibly the aluminium splinting will not prove sufficiently strong to stand the journey to the base, and a splint of this pattern made of malleable wire may prove more suitable. Some of the latter are now being made, though for purposes of dressing the flexibility of aluminium splinting renders access to the wound easier.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A CASE OF HERMAPHRODITISM.

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CASES of hermaphroditism, whether of the true or so-called false variety, are sufficiently rare to justify the recording of any case coming under observation. In the case to be described there are certain features relating to the age and upbringing of the individual and the circumstances in which she first came under notice, which materially add to its interest, and which will be dealt with in due course. Before actually describing the case I propose to give a brief account of the personal and family history.

Her parents died when she was young, her mother having drowned herself when the child was 2½ years old. She is illegitimate, and her mother had two other children, one at least of whom was illegitimate. One brother, aged 26, is a collier, and apparently normal. A sister, aged 22, is said to be addicted to drink and gambling, and shows other immoral tendencies. Her antecedents and family generally appear to be decidedly degenerate and of a low moral type. She was brought up by foster-parents, was educated as a girl, and attended an elementary school from 4 to 14. She says that she reached Standard VII. at the age of 12, and afterwards competed for a scholarship at the secondary school, being bracketed with another girl for first place. After leaving the school she entered domestic service for a time, subsequently going to live with the sister before referred to. Later she worked as kitchen-maid at a restaurant and afterwards in a mill. Whilst there she stole a pair of boots, and was as a result removed to a Salvation Army shelter in order "to redeem her character." She signalised her stay in her new abode by stealing a small sum of money and decamping with "another girl." They appear to have stayed out all night and got into low company. Separating from her companion, she applied for employment at the local labour bureau, and her masculine voice and general appearance bringing her under suspicion, the police were communicated with. It was immediately after this that I first saw her. It was noteworthy that this was the first occasion on which any serious question had been raised as to her sex, she being then 17 years and 8 months old. It appears, however, that when her voice "broke" at the age of 17 she saw a medical man who attributed it naturally enough to a "cold." About the same age she is said to have menstruated for the first time, the catamenia lasting a week. She has since menstruated on two occasions, the period in each case lasting about two days.

External appearance.—She appears to be a tall, masculine girl, of rather pallid complexion, with long hair like a girl's, and dressed in female clothes. From her general aspect

she would pass for a girl, except for her noticeable length and strength of limb, the presence of a downy growth of dark hair above the upper lip, and the striking fact that her voice is gruff and exactly like that of a man's.

Bodily conformation and description.—She is 64½ inches in height (in boots) and her weight is 130 pounds. The most noticeable points about her when stripped are the largeness of the bones, both of trunk and limbs, the prominence of bony points, the excessive muscular development (from a female point of view), and the relative absence of subcutaneous fat. She lacks entirely the roundness of limb and throat which is so characteristic of the female sex. The length of the right arm from the acromion process to the middle finger-tip is 29 inches, and from the axilla to the same point 27½ inches, the corresponding measurements for the left arm being identical. The pelvis is much more of the male than the female type, the muscular development and prominent bony points contributing to this effect. The circumferential measurement of the pelvis taken at a point half way between the anterior superior spine and the great trochanter is only 33½ inches, which is much less than one would expect in a female of her height. The apparent breadth of pelvis is increased by the fact that she possesses a "waist" as a result of the wearing of corsets and the consequent constriction of the body above the iliac crests. There is no approach to breasts of the female type even in the most rudimentary form. Nipples are present of the male kind but not raised above the level of the surrounding skin, and there is no sign of either glandular or adipose tissue in the mammary region. The legs from the thighs downwards are covered by a slight growth of fairly long dark hair. In addition to the rudimentary moustache before referred to, the features are hard and unrounded, and the ears are rather large. On the whole, the bodily conformation is that of a male rather than of a female.

Description of genital organs.—A scrotum is present, but is cleft in the middle. The left half contains a soft elastic body which in shape and feel resembles a testicle, and no doubt is one. Firm pressure on the organ in question elicits a feeling of discomfort and pain corresponding to the normal testicular sensation. The right half of the scrotum is much less developed than the left and is empty. Between the two halves of the scrotum and in a normal position is a rudimentary penis about an inch long. There is a well-formed glans and corona glandis, but the meatus urinarius is represented by a mesial depression placed below the normal site of this aperture, and it is quite occluded. There is a definite prepuce which on the dorsal aspect presents a free margin partially covering the glans, but which on the ventral aspect is incomplete, tapering away on each side into a narrow fold of skin which is gradually lost in the cleft of the scrotum so that the penis is hooded rather than surrounded by the prepuce. Extending downwards from the meatal depression in the middle line is a narrow ridge of tissue which corresponds in the upper part with the frænum præputii and which tacks down the penis, so that in the normal position only its dorsal aspect appears in view. Between the two halves of the scrotum there is a deep cleft, in the posterior portion of which can be seen an oval aperture about half an inch long and which represents the vagina. The margins of this opening are bounded by an incomplete ring of tissue representing the hymen. Slightly in front of the vaginal opening is a space corresponding to the vestibule and containing the opening of the urethra. Posterior to it can be seen a well-marked fourchette and fossa navicularis.

Bearing in mind that the male external organs represent a further stage in development than the corresponding female ones, the condition described may partly be explained as due to arrested development. The failure of union on the part of the *genital folds* would account for the absence of the male urethra, and a similar non-development of the *genital ridge* would explain the incomplete and cleft scrotum. On the other hand, the existence of the rudimentary vagina and hymen is to be regarded as a partial development along female lines, these structures being normally developed by a fusion of the lower ends of the Müllerian ducts. The simulation of the female type of external genitalia is heightened by the existence of a vestibule and female urethra. Here again the development has proceeded on female lines, these structures being formed from the primitive sinus urino-genitalis. It is to be noted, too, that an arrested development of the genital folds, which normally form not only the penile urethra but the erectile tissue surrounding it (corpus spongiosum), would explain the diminutive size of the penis and the imperfectly formed prepuce. It is probable, on the other hand, that such portions of the penis as are derived from the genital eminence are normally formed—at any rate, the appearance presented is consistent with this explanation. It was, unfortunately, impossible to examine the internal organs. The rudimentary condition of the vagina rendered the presence of a uterus unlikely; at the same time, the history of menstruation, if authentic, suggests the presence of an ovary. On the whole, the case approximates most closely to the variety described as internal male pseudo-hermaphroditism, although, as has been said, one cannot exclude the possible presence of an ovary.

References.—1. Quain's Anatomy (Embryology). 2. Heisler's Text-book of Embryology. 3. Coats' Manual of Pathology.

APPENDICITIS WITH THE CÆCUM ON THE LEFT SIDE.

BY GRAHAM W. CHRISTIE, M.B., CH.B. EDIN.,
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THE annotation in THE LANCET of Jan. 22nd on this subject has reminded me of a similar case which came under my observation about a year ago.

The patient, a married woman aged 22, was admitted to Stockport Infirmary with a view to having appendectomy performed, her medical attendant having diagnosed the case as one of chronic appendicitis. The history was that six weeks previous to admission she had suddenly been taken ill with an attack of acute pain on the right side of the abdomen, accompanied by vomiting. She had been confined to bed since, her appetite was still poor, with persistence of dyspeptic symptoms, and she had never been free from pain in the right side. Menstruation was normal and regular. On examination distinct tenderness in the right iliac region was elicited: per vaginam nothing abnormal was felt. I opened the abdomen by a median incision below the umbilicus. The cæcum was sought for in the usual position but could not be found. The descending and sigmoid colon occupied the right side of the abdomen and pelvis, while further exploration revealed the ascending colon on the left side, with the cæcum and a long inflamed appendix occupying the left iliac fossa. The spleen could be felt on the right side. The right ovary, which was much enlarged and cystic, was removed and appendectomy performed. The patient was kept in bed for 16 days and except for a little bronchitis made an uninterrupted recovery. Three months later patient expressed herself as well and free from pain.

The position of the heart was that of dextrocardia. It was therefore a case of general transposition of the abdominal and thoracic viscera with the appendix in the left iliac fossa.

A CASE OF ECTOPIC GESTATION AND APPENDICITIS.

BY F. M. NEILD, M.B., B.S. LOND.

IN a recent number of THE LANCET I saw a note on a case of ectopic gestation mistaken for appendicitis. The following case may be of interest, as the two were associated.

The patient, aged about 30, sent for me on April 1st, 1915. Two days previously she had had an attack of severe pain in the abdomen with vomiting. She at first felt cold and afterwards hot, but did not take her temperature, though she thought she had fever. The pain was now gone and she felt much better. For some months previously she had had frequent attacks of abdominal pain, which she referred to the right iliac fossa, but none so severe as this last one. She was convinced she had appendicitis, but had not told me before because she did not want an operation. Now, however, she had made up her mind to have one if I thought it necessary. Menstruation had been quite regular. She had had two children; the younger one was 2 years old. The pulse and temperature were normal. The abdomen moved well on respiration, but there was marked tenderness over McBurney's spot. There was little or no rigidity. I advised her to have the appendix removed.

Operation took place on April 10th, menstruation having come on and been completed meanwhile. She had had one more attack of pain not very severe in intensity. On opening the abdomen dark fluid blood at once welled into the incision. The right tube was enlarged, corresponding to an ectopic gestation of about a month. The tube had not ruptured; bleeding had taken place through the ostium abdominale. The right tube and ovary were removed, and also the blood which was filling the pelvis. The appendix was next examined; it was short, greatly thickened, and densely bound down by adhesions. These were separated and the appendix removed. Healing was by first intention, and she left the nursing home on April 19th. Three weeks later she expressed herself as never having felt better in her life.

I take it the numerous attacks of pain were due to the condition of her appendix, while the later severe attack was due to the bleeding which was taking place.

Shanghai.

Medical Societies.

MEDICAL SOCIETY OF LONDON.

Gunshot Wounds of the Spine.

A MEETING of this society was held on March 20th, Lieutenant-Colonel WILLIAM PASTEUR, R.A.M.C. (T.), the President, being in the chair.

Captain JAMES COLLIER opened the discussion from the medical aspect. He stated that the large number of wounds and injuries of the spinal cord which had come under observation during the past 18 months had given an unparalleled opportunity of investigating the physiology and pathology of the human spinal cord. Many new facts had been brought to light and former knowledge thrown into a fresh perspective. He desired to call attention to six subjects in particular: (1) The nature and mechanism of production of the lesions; (2) the state of the reflexes and of muscle tone in the affected region; (3) the distinction between root lesions and central lesions of the cord; (4) disturbances of sensibility; (5) the occurrence of rare and unusual phenomena; (6) prognostic indications. The lesions he classified into direct, indirect (including concussion), secondary, and remote, illustrating each by the detailed recital of a case. In nearly all the cases he had found the initial clinical picture to be that of a total lesion of the cord, and prognostic indications were to be sought in the condition of the reflexes to determine how much of the transverse lesion was anatomical and how much physiological.

Lieutenant-Colonel DONALD ARMOUR, who opened the discussion from the surgical aspect, said that the cases met with fell into two main classes: (1) those in which the function of the cord was not interfered with; and (2) those in which there was interference with function with or without damage to the vertebral column. Later effects, such as arose from inflammation and adhesions, serous cysts, blood clots, continual suppuration, &c., had also to be considered. The most frequent cause of cord injury was a driving in of fragments of bone. The lesions varied from concussion to extensive injury, diffuse and irregular in distribution, with a tendency to diminish gradually from the site of the disturbance. The point of chief importance was whether it was possible to recognise clinically the nature or extent of the damage. X rays were most unreliable in this respect. They might fail to reveal a bony injury when it was present, and never showed the full extent of the injury within the spinal canal. With regard to the operative procedure three questions were to be considered. 1. Would any benefit accrue? 2. Would life be endangered by it? 3. Might the patient be made worse by the operation? In practised hands he did not think that operative treatment should add materially to the risk. The level of the lesion as determined by diagnostic methods did not correspond to the level of the vertebral damage, and therefore a wide area of the cord should be exposed. The dura, if intact, should not be opened if sepsis were present, and drainage should be employed. A contraindication to operation was a septic condition of the kidney or bladder. If the intercostal muscles were paralysed this undoubtedly added to the danger of the operation, but such danger might be successfully guarded against by a skilled anæsthetist. An operation was indicated to remove pressure by bony fragments, hæmorrhage, œdema, secondary thickening, &c. Since there was no sure means of distinguishing between concussion and actual gross damage, he thought that if any doubt existed the patient should be given the benefit of the chance of relief by surgery.

Dr. LEONARD GUTHRIE, speaking of the prognosis in transverse lesions of the cord, said that in cases of complete transverse lesion certain familiar symptoms arose; similar symptoms resulted merely from spinal shock. One could not exclude spinal shock within three months of the injury. In certain cases in which an operation had been performed it had been reported that the cord was disintegrated and pulped, and yet return of function followed. He considered that any return of function was an indication that the cord had not been completely destroyed as was supposed. He referred to such a case where some return of power and of reflexes took place a year and three months after the cord was said to have been destroyed. With spinal shock one might meet with, first, flaccid paralysis, then paralysis in extension or flexion. Paralysis in extension was an indication of a lesion less severe than was paralysis in flexion. Flexion which had become permanent was distinct from that occurring with stimulation, and represented a cadaveric position or a return to the fœtal condition. One should always exercise great caution in accepting the view that a complete transverse lesion of the cord had existed.

Captain E. ADAMS recorded his experiences at King George's and St. Thomas's Hospitals. There were 14 cases with positive evidence of damage to nerve tissue In all there were destruction of nerve cells, hæmorrhage, and concussion. Three ended fatally, two from urinary sepsis, and one from broncho-pneumonia; in three there had been no improvement, but of one it was too early to speak definitely; in eight substantial progress had been noted. In such cases he thought that bed sores and catheters must account for some fatalities. The former danger had been greatly lessened by more skilled nursing, but he queried whether the profession did its duty by handing over cases of spinal cord damage to male nurses for regular catheterisation. The same thing seemed to be suggested by those who, in France, had resorted to suprapubic cystotomy. Relief of pressure on the cord was the chief aim of surgery. He preferred to wait for two or three weeks after the wounds had healed.

Captain E. F. BUZZARD said that he was in almost complete agreement with Colonel Armour and Captain Adams. In all cases in which an operation was done to determine whether there were pressure on the cord one should not be satisfied with the mere removal of a foreign body without proper laminectomy. Paraplegic symptoms sometimes came on after a considerable interval. He related such a case where a foreign body had been removed without laminectomy. The condition had greatly improved after rest. More rest was required after an injury in the cervical region than after an injury elsewhere in the cord. A troublesome sequel to cord lesions was spasticity. In the treatment of this the education of the patient to enable him to overcome the contracture was important. Electric treatment and massage possibly did more harm than good.

Major G. NEWTON PITT had found that the results of laminectomy were generally disappointing; it was therefore very difficult to know when to insist on its performance. In the treatment of the cystitis he had been impressed by the improvement which followed suprapubic cystotomy in two cases. Many anomalies we e met with in the reflexes. The imperfect flexor plantar response was very interesting, as also was the variability of the plantar responses. He had seen a spastic condition of the legs with flexor plantar response in some cases, and considerable divergencies in the great and little toe responses on each side, and in that of the tensor vaginæ femoris. The etiology of these variations needed more elucidation.

Dr. S. A. K. WILSON referred particularly to so-called cases of concussion of the cord. One case was that of a youth who was advancing when a shell burst 10 yards in front of him, but without hitting him. He fell down on to soft ground with sudden abdominal pain, followed by involuntary defæcation and loss of power and sensation below the waist. The symptoms were those of a transverse lesion at the level of the ninth dorsal segment. He had gradually improved. The nature of such conditions was undetermined; possibly they might arise from sudden evascularisation of the cord.

Lieutenant-Colonel P. SARGENT agreed that when there existed any doubt the patient should have the benefit of an exploratory operation; it was not a difficult or dangerous procedure. It would reveal conditions not recognisable by neurological methods or by X rays. It was difficult to decide when to operate in the early stages. In certain cases the spinal cord was swollen, particularly in the cervical region. Many such cases recovered spontaneously and progressed satisfactorily, but it was open to question whether a simple incision into the cord would not assist in recovery and avoid further destruction. The chief difficulty in recent cases was sepsis, which was often a deterrent.

Sir JOHN BROADBENT recorded a case in which paraplegia occurred without loss of sensation or sphincter trouble. The man recovered, with the exception of slight loss of power. He agreed as to the value of teaching the patient to overcome contracture.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF SURGERY.

Ectopia Vesicæ treated by Transplantation of the Ureters.—Radium Emanation Table for Therapeutic Purposes.—Cheilotomy for the Relief of Crippling Arthritis.

A MEETING of this section was held on Jan. 28th, Professor F. CONWAY DWYER, the President, being in the chair.

Mr. H. STOKES read a paper on a case of Ectopia Vesicæ which he had treated by transplanting the ureters. The patient, aged 25 years, had been brought up as a male, but a systematic examination proved that she was a female. She presented the usual bulging patch of inflamed mucous membrane between the widely separated pubic bones. The vagina was represented by a funnel-shaped passage with a small end opening in the normal situation. At the operation the ureters were isolated for about three inches, a rosette of bladder mucous membrane being left attached. Through a transverse incision the abdomen was opened and the uterus removed. The ureters were drawn in succession into the rectum, into which the rosettes projected freely. For three weeks the patient did well, and was able to keep herself quite dry. She subsequently developed signs of septic absorption; the end of the right ureter having sloughed, a fistula formed through the vagina. Ascending infection took place. Three months later an attempt was made to anastomose the right ureter into the colon through a flank incision. This proved to be impossible on account of the ureter being inflamed and attached to the vena cava. The right kidney, which was infected, was removed, but the patient died. A post-mortem examination showed that death was due to ascending infection of the remaining kidney, which was due to an abscess that had formed outside the rectum around the transplanted right ureter. The pelvic organs were normal except for the curious vagina and an internal displacement of the right ureter, which may have been caused by the first operation.

Captain WALTER C. STEVENSON, R.A.M.C., read a paper, illustrated by lantern slides, on a Radium Emanation Table for Therapeutic Purposes. The average quantity of emanation employed during a treatment could be directly read off the table instead of resorting to the troublesome expedient of a series of multiplications.

Mr. W. I. DE C. WHEELER read a paper on a case of Crippling Arthritis which he had relieved by Cheilotomy. The patient had been a cripple for seven years, and locomotion was only possible with the aid of crutches. Extension of the left knee-joint was impeded by lipping of the outer margins of the tibia and femur, and no weight could be borne on the right limb owing to the presence of a ring of osteophytes at the junction of the head and neck of the femur. Abduction of the leg was impossible. The operation of cheilotomy was performed in October, 1912, on the left knee, and was followed a week later by removal of all the osteophytes from the right femur. There was a line of cleavage, similar to that seen in a bunion, between the new and old bone. The relief was immediate and the result perfect. When the wounds were healed the patient walked without crutches and without pain, and had full movement of both joints. X ray photographs taken nearly three years afterwards showed no tendency to recurrence of the disease. This, Mr. Wheeler stated, was the first case of cheilotomy on record. Mr. Wheeler drew attention to similar cases in older people where there was no line of cleavage between the old and the new bone, and expressed the opinion that the operation of cheilotomy in such cases may be followed either by new formation of bone or complete ankylosis of the joint.

HUNTERIAN SOCIETY.—A meeting of this society was held on March 8th at 1, Wimpole-street, W., Mr. W. H. Kelson, the President, being in the chair.—Dr. W. Langdon Brown read a paper on New Treatment of Diabetes. He thought it must be borne in mind that, whereas the disease was formerly looked upon as due to a disorder of carbohydrate metabolism, it was now recognised that such facts as the presence of oxybutyric and other acids, and the varying amount of ammonia in the urine, indicated that the metabolism of fats and proteids was implicated as well. In order to standardise his results he used the test diet containing 100 grammes of carbohydrates and 108 grammes of proteids. This was capable of producing 164 grammes of carbohydrates, and the proportion of this excreted as glucose gave the "coefficiency of excretion" in any particular case. The essential principle of the new treatment was fasting. While fasting, in an ordinary person, would occasion a rise in the diacetic acid, in a diabetic it was followed by a diminution in its amount. His method of treatment now was to enjoin a complete fast for 48 hours, and to follow it up with 48 hours of von Noorden's "vegetable-egg" diet. Proteid was then added cautiously during the ensuing days; this formed the "ladder diet" stage. After a fortnight the fast routine might be repeated in suitable cases. The aim was finally to reach a "balanced diet," in which a small proportion of carbohydrates found a place. The usual diabetic diet contained far too much proteid, and there was no doubt this excess often predisposed to acidosis. Diabetics were not intolerant of the carbohydrates equally. Lævulose, for instance, was much more readily assimilated than most. Artichokes contained inulin, which, on digestion, gave rise to lævulose, and these, therefore, might be made the first addition to the diet. Others, readily assimilable, were potatoes, baked apples, milk in small quantities, and even green peas. His experience was that, by making use of the fast routine and the balanced diet, far more satisfactory results were obtained than by other dietetic methods.—Dr. Russell Wells was able to confirm, from his own experience, the value of the method Dr. Langdon Brown had advocated. He had used a routine almost exactly the same. He regarded "bulk" in the diet as of great importance, and, with this in view, he had found lettuce and celery very helpful. The alkalies were, of course, of great value in acidosis, but he had no belief in the value of any other drug in diabetes.—Dr. John Adams asked whether the passing of small quantities of sugar intermittently was to be regarded as a bar to proposals for life assurance.—Dr. A. C. Jordan had found, by X ray investigation, that all diabetics suffered from extreme intestinal stasis. One of the results of this was duodenal distension, giving rise to a hard nodular condition of the pancreas—hence we got pancreatic diabetes associated with the symptoms of hyperchlorhydria.—Dr. A. S. Currie had found codeia of very great service in the treatment of diabetes.—In reply, Dr. Langdon Brown agreed that codeia was able to reduce the amounts of sugar excreted in the urine. He was careful, however, not to use it while investigating the progress of a case under other treatment. He did not think the relation between diabetes and intestinal stasis was as yet very clear. If stasis was the cause of the disease, the severity of diabetes in early life was inexplicable, and, as a matter of fact, pancreatic damage was not found in the large majority of cases. He thought that glycosuria, of any degree, constituted a bar to life assurance.

HARVEIAN SOCIETY OF LONDON.—A meeting of this society was held on March 16th, Dr. Edmund Cautley, the President, being in the chair.—The Harveian lecture was delivered by Dr. James Taylor on Nervous and other Medical Disorders as seen at an Eye Hospital. The lecture was illustrated by numerous lantern slides, and is published in this issue of THE LANCET.—In proposing a vote of thanks to the lecturer Dr. Leonard Guthrie recalled the intimate relationship which Dr. Taylor had with the late Dr. Hughlings Jackson, who was one of the first to point out the importance of eye symptoms in neurology.

Reviews and Notices of Books.

Surgery in War.

By ALFRED J. HULL, F.R.C.S., Major, R.A.M.C.: Surgeon, British Expeditionary Force; late Lecturer on Surgical Pathology, Royal Army Medical College, Millbank, and Surgeon, Queen Alexandra Military Hospital. With a preface by Sir ALFRED KEOGH, K.C.B., M.D., Honorary Physician to H.M. the King; Director-General, Army Medical Service. With 26 plates and 55 text figures. London: J. and A. Churchill. 1916. Pp. 390. Price 10*s.* 6*d.* net.

ON the experience of wars in the past must the medical arrangements and the preparations for wars in the future be based. Each succeeding war adds something to our knowledge of the best methods of treating the sick and wounded soldier, and at the same time it shows us that some of the teaching of the past has been wrong—at least our advancing knowledge will point out better methods to be employed. There is yet another reason why each war makes us modify our opinions and methods; the ingenuity of man is ever inventing newer and more efficacious weapons of offence and the military surgeon, or it may be physician, has to keep pace with the ever-increasing variety of wounds in war. We possess many treatises by the ancient and medieval surgeons on the surgery of war, in reading which the reader cannot fail to be struck by the simplicity of the lesions to be dealt with, and the fewness of the means of treatment at command. With the invention of "villainous saltpetre" a new era in military surgery appeared, though the "Greek fire" which preceded gunpowder must have produced severe burns.

When the present war started military surgeons were depending on the teachings derived mainly from the experiences of the South African War. But it was soon evident that the conditions were different: the weapons were in many respects new, for high explosives were little used in South Africa, while the soil in Flanders, highly manured and intensely septic, showed itself to have very different effects from those of the veld upon all wounds. It is therefore not at all surprising that the lessons learned in South Africa have had to be in great part re-learned in the war that is still raging. Many campaigns are so short that hostilities cease before any new corpus of knowledge can be formed, based on the new experiences, but now that we have had some 18 months of fighting it is certainly time that an authoritative pronouncement should be made upon what has been learned. In the compass of this little volume has been compressed the essence of the progress which surgery has made since the inception of the war, and we extend a very cordial welcome to it.

The object of the book is, in the words of the author, "to give to members of the profession who have not had experience of war surgery an account of the treatment which has proved efficacious." The book is not intended to be in any sense complete. Symptomatology and those details of treatment which are to be found in text-books of general surgery have been purposely omitted, space being mainly devoted to what is new and trustworthy. In an able, though brief, introduction Lieutenant-Colonel E. M. Pilcher describes the factors peculiar to the present campaign. He holds that owing to the very magnitude of the war more surgeons have been present than in any previous conflict, of whom a goodly number may be considered leaders of surgical thought. In the second place the assistance of the bacteriologist has been noteworthy, and the work of Sir Almroth Wright and his colleagues comes in for special notice. A third factor is the exclusive use of the pointed bullet in machine guns and rifles. This bullet shatters bones; it turns on impact, proving very destructive to the thoracic and abdominal organs; it has an explosive effect even at long ranges, and it tends to break up. Hence complaints of its inhumanity are not surprising; but, as Colonel Pilcher says, "That our enemies (who were the first nation to introduce the pointed bullet) should publish pompous diatribes in their medical press inviting a sympathetic world to help them curse the inhuman English bullet is amusingly surprising."

After a chapter on the bacteriology of wounds by Lieutenant-Colonel L. W. Harrison, and one on the general condition of the wounded by Dr. Dudley G. Greenfield, follows the section on the treatment of wounds. We here find a clear exposition of the principles and practice of the use of the hypertonic saline solution; the solution now employed is the 5 per cent. solution of sodium chloride, the citrate being omitted as unnecessary. Next come chapters on the localisation and removal of foreign bodies and on the treatment of compound fractures. The practical nature of the instructions given on every page confirms the impression that the author is writing on a subject which he knows well. Chapters on gunshot wounds of the head, of the spine, on injuries to blood-vessels and to joints, on wounds of the abdomen and of the chest, conclude the work. Though the greater portion of the book is from the pen of Major Hull, chapters have been contributed by other writers. Captain H. Tanner is responsible for the chapter on the treatment of wounds by saline solution, Captain W. Miller for the chapter on gunshot wounds of the chest, and Captain E. N. Snowden for that on injuries of the peripheral nerves.

It is hardly to be expected that the views expressed in this book will command assent in all quarters, but as Sir Alfred Keogh says in the preface they are the outcome of practical experience and careful observation, and as such must command high respect. A word of appreciation is due to Dr. Dudley Greenfield for the illustrations, and to Lieutenant W. A. Edwards for the X ray plates.

There was a definite need for a summary of the present-day practice of surgery in war, and this book has supplied the need excellently.

LIBRARY TABLE.

Précis de Médecine Opératoire. By A. BROCA, Professor of Operations and Apparatus in the Paris Faculty of Medicine. With 510 illustrations. Paris: Masson et Cie. 1916. Pp. 296. Price 9 francs.—In his preface to this small book on operative surgery the author lays no claim to originality, but states that it is based very largely on the work of Sarabeuf, whose book is no longer read, as it is commonly considered too long and detailed to be a good text-book for students. Unfortunately, however, in his effort to produce an abridged text-book, M. Broca has restricted his work to so exceedingly limited an area of operative surgery, and so entirely ignores all other fields of operation, that he has considerably reduced the possible value of his work. For in the first part he deals solely with the ligature of arteries, and in the second with amputations and disarticulations. To the student whose interests are confined exclusively to these two branches of operative surgery the book may prove useful. It is published in a handy form, there are abundant illustrations, and

the language is simple enough to present no difficulties to a beginner in the study of medical French. As compared with English methods, there are certain differences of technique which may be noticed, the chief being in the choice of knives. All the illustrations depict the long-bladed knife, an instrument practically given up in this country. Its use, indeed, suggests that brilliant rapid cutting is still in vogue in France. In other respects there is not much to distinguish this book from many others of its kind.

Construction, Equipment, and Management of a General Hospital. By DONALD J. MACKINTOSH, M.V.O., M.B., LL.D. Glasg., F.R.S.E., Medical Superintendent of the Western Infirmary, Glasgow; Colonel, Assistant Director of Medical Services, Lowland Divisional Area. Second edition, with plans and illustrations. Edinburgh and London: William Hodge and Co. 1916. Pp. 164. Price 15*s.* net.—A new edition of Colonel Mackintosh's book on hospital management and construction is opportune just now when new hospital buildings are being erected in many places, or public and private institutions are being adapted for the reception of the sick and wounded. It is nearly seven years since we reviewed the first edition of this comprehensive work,[1] and the exhaustion of the first impression confirms the opinion we then formed concerning its usefulness. The rapid progress of medical and sanitary science is apt to render necessary from time to time some alteration in the internal structure of a hospital in order that full advantage may be taken of new forms of treatment, whilst the standards of hygiene are continually being raised and create problems of structural alteration. But hospitals are expensive structures and cannot be scrapped at will. An attempt should therefore be made so to plan the buildings that their internal structure can be altered to suit progressive needs. To this end a thorough knowledge of hospital requirements is essential, and Colonel Mackintosh's book affords useful help in this direction. The new edition has been revised by Mr. John Wilson, architectural inspector of the Local Government Board for Scotland, who has contributed a chapter on the construction of hospitals of a semi-permanent nature. This chapter deals with a subject of growing importance both in respect of accommodation and of economy of administration. The war has already produced some interesting experiments in hospital construction, and the experience gained should afford valuable help after the war.

Nutritional Physiology. By PERCY GOLDTHWAIT STILES, Instructor in Physiology in Harvard University and the Massachusetts Institute of Technology, Boston. Second edition, illustrated. London and Philadelphia: W. B. Saunders Company. 1915. Pp. 275. Price 6*s.* net.—It is barely two years since we noticed the first edition of this attractive book. In the preface the writer adopts an apologetic tone towards the elementary student, for whom the book is intended, in that he has found it more and more dangerous to make dogmatic and uncompromising statements and quite impossible to supply the downright and absolute dictation which the student craves. He reminds the student that many things are still debatable and that the power to suspend judgment while awaiting further evidence is a rare and a fine one. We congratulate the author on having brought his summary up to date without either the dogmatism which he disclaims or the colourless recapitulation of the opinions of others into which he might so readily have fallen as an alternative. The perusal of this new edition cannot fail to be profitable to the reader, whether his knowledge of the subject is elementary or advanced.

The Red Cross Barge. By Mrs. BELLOC LOWNDES. London: Smith, Elder, and Co. Pp. 197. Price 3*s.* 6*d.*—This small book is a quiet artistic triumph. There is very little story to it, but what there is we find to be beautiful, while if there had been more elaboration of the imaginary events we should have felt inevitably a jar between them and the tremendous historic happenings in which the action takes place. The time is the end of August and the beginning of September, 1914, and the scene is a little French town on the Marne which at the opening of the narrative has been quietly occupied by the victorious Germans in their rush on Paris, and which at the close is recovered by the French from the Germans, who are driven through it in disorderly retreat. Mrs. Lowndes shows us the sordid horror of war and the limitless misery of the old, the women, and the children who find themselves in the devastating track of a defeated and brutalised army. She gets her effects with no attempt at fine writing, and moves the reader by the obvious and simple sincerity of her report, which is emphasised by a close knowledge of French life. We feared at the beginning that Prince Egon would be made to display the tastes which he is deftly suggested to have, or that some of the episodes so dramatically published by the pencil of M. Raemaekers were going to be served up for our horror; but the apprehension wronged the tact of the author, who gains her effectiveness, in a story that is both dramatic and pathetic, by her studied moderation. The Herr Doktor is an excellent portrait of a type of educated citizen which has counted so much in Germany's honourable successes and yet has contributed in a measure to Germany's defaults from a high standard of international and sociological morality. But he is a good chap *(ein guter Kerl)*, and the most "Hun-eating" among us will be glad to presume that he was buried as an Englishman.

[1] Vide THE LANCET, vol. ii., 1909, p. 1445.

New Inventions.

A NEW SPIRAL DRAINAGE-TUBE.

THE drainage of a wound caused by an irregular piece of metal is a much more difficult problem than that of an operation wound leading to a septic focus. Typically, a severe battle wound is a deep hole whose entire length swarms with bacteria, for it is lined with mud and clothing. It ends in a cul-de-sac full of shattered bone and arrested metal. In such a case the track must be drained as well as the end if spreading gangrene is to be avoided. It is obvious that the usual rubber tube with a few lateral holes will not be ideal. Recognising this, several surgeons have introduced modified tubes. Of these the metal spiral is the most effective.[1] It is the one which most closely approaches the ideal—a rigid tube which is all holes and no substance. During last autumn I tried drainage spirals of soft iron wire, but abandoned them because they caused too much pain when being removed. Now, however, I have done away with this deficiency by sheathing the wire with fine rubber tubing and then twisting it into a plain open spiral. This modification allows the tube to be screwed in and out of the wound without undue pain. Messrs. Weiss and Co., of Oxford-street, have made a supply of these spirals for use. They are of varying diameters and about 4 inches long. They can be shortened or lengthened readily by hand, and are easily sterilised by boiling. If their use be limited to dangerous wounds until the infection subsides I believe they will adequately fill a useful rôle.

H. DE L. CRAWFORD, F.R.C.S. (Lieut. R.A.M.C.).

[1] See Dr. Francis H. Pott: "Charcoal" or "Binding" Wire for Drainage-tubes, THE LANCET, May 29th, 1915, p. 1153.

THE LANCET.

LONDON: SATURDAY, MARCH 25, 1916.

Camp Jaundice in the Near East.

THE extensive prevalence of jaundice amongst the troops engaged in the Dardanelles Expeditionary Force has naturally given rise to much surmise as to its exact causation. An interesting discussion was held at Alexandria on Nov. 7th last year, at which various views were expressed, some of those present maintaining that the condition was that known as "epidemic jaundice," and others that it was due to a direct extension from the duodenum, irritated by some unknown cause, bacterial or otherwise, but that it was not the true epidemic jaundice. At that discussion Professor KARTULIS gave an admirable historical review of epidemic jaundice and other epidemic bilious affections occurring in Alexandria and several Mediterranean ports. Although he did not refer to the cases occurring among the soldiers, nevertheless the description he gave is of value for purposes of comparison. From the observations of the speakers generally at the debate it became obvious that from a clinical point of view alone it was difficult to distinguish the cases under consideration from those of ordinary so-called "catarrhal jaundice," and as the bacteriological findings were not discussed at any length the knowledge of the precise etiology of the condition was not appreciably advanced.

In another column we publish a valuable addition to what is known on the subject in an article on "Camp Jaundice" and the Paratyphoid Epidemic at the Dardanelles, by MM. A. SARRAILHÉ and J. CLUNET.[1] In conjunction with their English colleagues these observers were able to collect precise information regarding the pathological conditions of the Expeditionary Forces both before and during the epidemic, which was at its height in September and October of last year. From the end of August cases occurred in all parts of the peninsula occupied by the allied forces, and blood cultures afforded a proof that it was indeed a question of infectious jaundice. The symptoms commenced, like an ordinary gastric derangement, with insomnia, headache, malaise, and continuous fever between 38·5 and 40° C. From the beginning of the malady symptoms of cholecystitis were noticed, together with nausea, shivering, and pain and resistance in the region of the gall-bladder. Characteristic changes were noticed in the urine at the end of five or six days, and a day or so later the jaundice became more marked; at this period a decrease in temperature to about 38° C. was noticed, and about the tenth day the temperature became normal and generally for a time subnormal. Pruritus was absent; the stools were at first loose, but subsequently became formed. The spleen was seldom increased in size at the beginning of the illness, but during convalescence it often became enlarged. This type was the most frequent, but several varieties were observed, especially in regard to the intensity of the jaundice. This description closely corresponds to that given in the text-books under the name of Weil's disease, with the synonym of infectious jaundice. The chief interest, however, attaches to the observations on the bacteriological results before and during the epidemic of jaundice. From June 10th to Dec. 20th, of 606 blood cultures which were made 294 were positive. To quote the words of MM. SARRAILHÉ and CLUNET: "During the first three months we only observed results according to text-books." Thus the typhoid bacillus was isolated on 30 occasions and paratyphoid B on 102, but no paratyphoid A. But towards the middle of August atypical bacteria appeared, and an interesting point was the non-agglutination of these germs by the experimental sera. Attention is drawn to the fact that the occurrence of the non-typical forms corresponded with the appearance of the jaundice, and that later, in the majority of the patients suffering from jaundice, the bacilli of true typhoid and of paratyphoid B were not found, but germs approaching the paratyphoid A were isolated, and the term dardanellensis or species D was adopted. Colonel L. S. DUDGEON has employed the term paratyphoid D to organisms which he isolated. The study of this species of germs is not yet complete, and prolonged investigation will be necessary before the exact facts can be determined. The cases of jaundice which have been admitted into the hospitals of this country have been, as a rule, in the convalescent stage, and although attempts have been made to isolate causal micro-organisms, these efforts have not yet been entirely successful. But from the above observations it has been made manifest that a clear modification of the biological characteristics of the germs isolated by blood culture occurred, coinciding with the appearance of jaundice in the course of an epidemic of paratyphoid.

It has always been recognised that infection plays an all-important part in Weil's disease. The consumption of tainted meat has been traced, previously to this war, in a number of cases where infectious jaundice has occurred; epidemics have also occurred amongst workmen engaged in cleaning out sewers. The conditions of a military campaign would thus be of a nature likely to give rise to infectious jaundice. The doubts which have been expressed as to whether this is the malady which has appeared during the war must largely disappear, we think, after the observations to which we have drawn attention. Ordinary catarrhal jaundice is, of course, likely to occur as a sequence of dyspepsia or exposure to cold in men who have been in the trenches,

[1] A preliminary notice of this work appeared in our Paris correspondence on Feb. 19th (p. 428).

and such an explanation might be given of those cases which have occurred on the Western front. But an epidemic character is there absent, and the etiology is probably entirely different from that of the cases among the troops engaged in the Gallipoli campaign.

The Fight Against Venereal Disease.

FROM the report of the Royal Commission on Venereal Diseases, which was published at the beginning of this month, it appeared that the Commissioners deliberately issued that document while the great war was at an acute phase. Granted that the value of their work is to some extent jeopardised by the fact that public attention is absorbed by the war, still the issue of the report is fully justified, for action can be taken in accordance with the recommendations at the earliest moment after cessation of hostilities. It was right that the nation should be in possession at once of the information which the Commissioners had collected and of the views at which they had arrived in consequence. The recommendations of the Commissioners and their general conclusions were published in THE LANCET of March 11th, but the whole Blue-book being available at a nominal cost we suggest that it should be read by all medical men, and indeed all laymen, whose public work brings them into touch with the matter. The incidence of these diseases forms one of our greatest social curses, and there seems at the present moment a really good opportunity for attacking it in a systematic way, the medical profession coöperating in a practical manner with lay authorities.

Simultaneously with the issue of the report of the Royal Commission there appeared a circular from the National Council for Combating Venereal Diseases setting out the full constitution of that body, its objects and work. The National Council exists to provide accurate and enlightened information as to the prevalence of venereal diseases and the necessity for their early treatment. It aims also at promoting greater facilities for such treatment, and at increasing the opportunities for medical study of the diseases, thus encouraging the dissemination of sound knowledge of the physiological laws of life. With these general purposes in view the Council proposes to assist the work of any existing associations having similar objects or overlapping activities, and generally to form just such a link between the physician, the pathologist, the sanitarian, and the thinking citizen as is required both for the education of the public and the promotion of legislation. The work done by the Council has so far been mainly introductory to carrying out this programme, but now that the Royal Commission has published its report, and furnished thereby clear indications as to the direction in which action should be taken, we may expect to hear more of the activities of the Council. All the members of the Royal Commission have been invited to join the National Council, and it is of good augury that the majority of them have accepted the invitation. Until their report was published the Commissioners were unable, of course, to take part in any movement of the kind.

The first step taken by the National Council has been to draw the attention of its members to paragraphs 6, 7, and 17 of the report of the Royal Commission on Venereal Diseases.[1] These paragraphs, which are among the most important of the recommendations of the Commissioners, suggest that extended facilities should be made available for the diagnosis of venereal diseases by laboratory methods; that measures should be taken to render the best modern treatment of venereal diseases available for the community; and that the expenditure on schemes of treatment should be assisted by grants from Imperial funds. The National Council for Combating Venereal Diseases is strongly of opinion that organisation of work on the lines of these recommendations should be undertaken at once, and we agree that, although this is not the time for spending money in any unnecessary way or fruitless manner, it is exactly the time when funds should be found for a purpose of this kind. Neglected venereal disease is a vast source of national expenditure. The various laboratories of county councils and boroughs could not be better employed than assisting by laboratory methods in the prevention, diagnosis, and treatment of venereal diseases, and we trust that they may be subsidised to that end.

[1] THE LANCET, March 11th, p. 581 et seq.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.—A Comitia was held on March 17th, Dr. Frederick Taylor, the President, being in the chair. Communications were received from the secretary of the Royal College of Surgeons of England, dated Feb. 11th and March 10th, reporting proceedings of the Council of that College on Feb. 10th and March 9th respectively. A resolution of the Central Medical War Committee, dated March 1st, was considered, and after discussion the following resolution was passed:—

That this College is willing to join the Royal College of Surgeons in forming an Advisory Committee to give advice to the Government in relation to medical practitioners in the metropolitan district required for service in the army, and also to advise on cases of special difficulty elsewhere in England and Wales. Such advice to be communicated through the Central Medical War Committee without alteration to the Government departments concerned.

The President then dissolved the Comitia.

BRISTOL ROYAL INFIRMARY.—The annual meeting of the subscribers to this infirmary was held on March 7th, under the presidency of Sir George White. The medical report stated that during 1915, in addition to 4610 military patients, 3481 civil in-patients were admitted, making a total of 8091 in-patients. 45,654 out-patients were treated. The financial statement showed that the ordinary expenditure exceeded the income by £4313. The chairman announced the bequest of £45,000, free of all duties and expenses, from the late Mr. T. F. M. Capern, an equal amount being left to the Bristol General Hospital. The indebtedness on the new infirmary buildings is about £25,500 and the accumulated deficit on income account is £14,500, so that with this munificent gift the Bristol Royal Infirmary is free from debt; but Sir George White reminded the subscribers that the annual expenditure was £20,000 and the income £15,000, and consequently he appealed for increased subscriptions.

Annotations.

"Ne quid nimis."

THE WORK OF INSPECTORS OF FOODS IN WAR-TIME.

IN a report issued last week by Dr. A. W. J. MacFadden, Chief Inspector of Foods to the Local Government Board, a short account is given of the work of the food inspectors in connexion with the supervision of the preparation of army food supplies during the year 1914–15. Information as to the sources of supply of food materials for army contracts was provided by the War Office, and, by means of returns received from the commanding officer of the various units, details were also obtained as to regimental supplementary feeding arrangements. In his annual report Dr. Arthur Newsholme, the Medical Officer of the Board, states that the place of preparation of all food materials was ascertained by means of this organisation, when the medical officer of health of each district concerned was furnished with particulars. He was asked to keep the preparation of these foods under close observation, and to secure that only wholesome materials were used, and that they were prepared under proper hygienic conditions. He was further asked to report to the Board any serious default observed as regards either hygienic conditions or departures from War Office specifications. The classification of these returns and the indispensable correspondence with commanding officers and medical officers of health has, of course, thrown a large amount of work on the clerical staff. As Dr. MacFadden reports, the ordinary work of the foods branch during the greater part of the year has been quite overshadowed by that undertaken in connexion with this inspection, while the staff was deprived of the services of Dr. J. M. Hamill and Dr. G. W. Monier-Williams, who are officers in the Territorial Force. Also early in 1915 two inspectors were told off to supervise army meat contracts in North and South America, thus further depleting the staff. Dr. MacFadden says that the measures taken, for the organisation of which he was responsible, have helped to secure standards of quality and wholesomeness in the materials supplied, and have undoubtedly tended to prevent abuses in connexion with the food-supply of soldiers, such as have been experienced in previous campaigns. It appears that no complaints of a serious nature have been received from the forces abroad as to the quality of the food materials supplied to them. In certain cases pressure had to be brought to bear upon the manufacturers to improve the hygienic conditions under which the food materials were being prepared. This pressure was only possible through the officials being in position to enforce War Office requirements, but Dr. MacFadden fears that the improved standards of cleanliness which have been secured will not be maintained by many of the firms when they are no longer engaged on War Department work. We quite agree with Dr. MacFadden that the information which has been gained by officers engaged on this work emphasises the desirability of conferring upon sanitary authorities more stringent powers for securing that food intended for human consumption should be prepared under hygienic conditions.

ANCIENT AND PRIMITIVE TREPHINING.

THE culture-drift which carried mummification to Peru and the megalith to Carnac and Stonehenge probably also disseminated the practice of prehistoric trephining. In a lecture recently delivered before the British Archæological Association Dr. T. Wilson Parry discussed the result of certain researches upon "The Art of Trephining among Prehistoric and Primitive Peoples,"[1] and in so doing he passed in review the pierced skulls of the late Stone Age in France and those of the Kabyles, South Sea Islanders, and ancient Peruvians. Taking the Stone Age skulls of France first, he showed that the operation of trephining had been carried out in very remote times with flint implements, probably saws, and with primitive box-drills, and that amulets, known as "rondels," had been formed from the surface of bone adjoining, in each given case, the orifice caused by the action of the rude instruments. The rondels, which have been found in numbers in ancient French burial places, are round or oval pieces of skull bone, pierced with holes. The holes, in the opinion of the lecturer, prove that the rondels had been worn as charms to guard probably against the diseases or demoniac possession which had led to the trephining. The Kabyles, it appears, trephine the skull in cases of trauma and in certain diseases unspecified. Near Biskra, in 1884, M. Vedrènes was shown a Thoubib whose cranium had been trephined three or four times by his father, and the trepanned area was marked by a deep depression. His father, a saint, had been trepanned several times, and his four saintly brothers practised the operation in the region of the Aurès Mountains. They were led to undertake it when the patient suffered acute pain in the head. One man was spoken of as having been trephined 12 times. The instruments used were a narrow saw and a pointed implement (*poinçon*). Dr. Parry, however, showed on the screen representations of trephines with a socket, which are used by the Kabyles much as the modern trephine is used by civilised surgeons. The Peruvians, as their skulls bear witness, were profuse and not unskilful trephiners, but their method of boring the skull was by means of a saw drawn in four different directions so as to produce a diagram on the cranium not unlike that drawn in the child's game of noughts and crosses. Four cuts at right angles were customarily made and the enclosed square of bone was broken away or picked out, often clumsily. According to the missionaries Cramp and Ellers, the natives of certain groups of islands of the South Seas trephine much in the same way as the Kabyles. They treat epileptics and persons injured by sling-stones or clubs, or those who merely suffer from acute pain. The motives of primitive trephining have been much discussed. It has been held by some that here was an instance of early surgical knowledge, how arrived at is not known. Others, including the late Sir Francis Galton, were of opinion that primitive man trephined in order to let an evil spirit escape from the skull of the victim. Epilepsy has always been attributed by primitives to demoniac possession, so that this explanation is worthy of respect. The South Sea Islanders, however, probably supply the most ancient motive for the operation. Certain of them believe that in cases of head trouble there is a crack in

[1] See THE LANCET, vol. i., 1914, p. 1699.

the skull. This crack is in the region of the anterior fontanelle. They enlarge the crack where the frontal and sagittal sutures join, and the enlargement is held to cure the mischief. But, it may be argued, a crack implies an opening for foreign bodies, "bad medicine," to obtain an entry within the head. Probably the South Sea Islanders, in common with the men of the Stone Age, believe that when a man suffers from fits, or pain, or when he has been struck, "bad medicine" has got into his head through a crack which must be enlarged to let it escape. With the growth of animistic ideas "bad medicine" becomes a devil, but in the earliest times, as in the Stone Age, the mischief was probably held to come from a blow, introductory of a foreign body within the cranium. The quacks of the Middle Ages, who drove a roaring trade by extracting stones from the heads of their patients, were known as *arracheurs de pierres*, and they supply an analogy which supports the foregoing theory. Even the snuff-taker of the seventeenth and eighteenth centuries believed that he was withdrawing humours of a mischievous kind from the brain when he took snuff. Dr. Parry dealt with his subject in a very interesting manner.

NITRO-DERIVATIVES AND TOXIC JAUNDICE.

THE handling of nitro-explosives has long been known to be a risk to the health of the operatives concerned unless careful regulations are obeyed, and a recent event would seem to imply that a stricter control of the provisions of the Factory Act is desirable now that the number of persons employed in such work has been so largely increased. That, at all events, was the view of a coroner's jury at an inquiry held this week by Mr. Luxmoore Drew into the circumstances of a female worker's death after employment in a munitions factory. It can be well understood that certain details as to the exact nature of the chemical explosive to which the illness and death of the operative were traced, according to the evidence given by the attending practitioner and official medical experts, cannot be disclosed. It suffices for the present to record that the illness was caused by the handling of a powder which contained a proportion of a nitro-hydrocarbon. The case in its medical details recalls the instances of poisoning by "dope," the varnish used in waterproofing aeroplanes, the toxic action being due in that case to the tetrachlorethane used as a solvent in the varnish which set up a fatal jaundice. Tetrachlorethane, however, is a more or less volatile fluid, whereas contact with a powder in the case just reported appears to have produced similar toxic effects. There would obviously be much less difficulty in the removal of a vapour from the neighbourhood of the operative than the removal of scattered particles of a powder. The case was diagnosed by Dr. H. P. Potter, and post-mortem appearances were described by Dr. B. H. Spilsbury, and Dr. T. M. Legge, H.M. Inspector of Factories, and the conclusion was that heart failure had supervened owing to a general process of degeneracy having been set up in the liver, heart, and kidneys by contact with a nitro-derivative. It was a case of toxic jaundice, as it has occurred in poisoning by "dope," and the body showed the typical pigmentation. The jury expressed their appreciation of the clearness of the medical evidence, and returned a verdict of "Death from misadventure," adding a recommendation that there should be fewer persons engaged together in a unit of space and that the provisions of the Factory and Workshop Acts should be rigidly enforced in such workshops. It may be remembered that in the *London Gazette* of Oct. 12th, 1915, the Home Secretary gave notice of an Order under Section 73 (4) of the Factory and Workshop Act, 1901, applying the provisions of the said section to all cases of toxic jaundice occurring in a factory or workshop; the Order would apply to jaundice due to tetrachlorethane, to nitro- or amido-derivatives of benzene, or, indeed, to any other poisonous substance.

WANTED, A GOVERNMENT MEDICAL OFFICER IN BRITISH COLUMBIA.

A CANADIAN correspondent writes: "There has been a rearrangement of the Government of British Columbia. The Premier, Sir Richard McBride, becomes Agent-General of the province in London, and is succeeded by Mr. Bowser, till now Attorney-General, and there is a new Cabinet. It is an opportune moment to bring to the attention of medical men a weak spot in the sanitary defences of an important province. For two years British Columbia has been without a medical health officer. Since the resignation of Dr. Fagan in February, 1914, his duties have been undertaken by the Provincial Secretary and Minister of Education (Dr. Young), who is a medical man and has undertaken to direct the health activities of the Government without any designated health officer. This system achieved the publication of the annual report which was criticised in THE LANCET a year ago.[1] The new Government is to include a Minister specially to look after agriculture, with a permanent secretary or deputy Minister under him. Surely the Government requires at least a deputy Minister with sanitary experience to advise on such matters, for example, as the health needs of the children, the risks that may arise from industrial camps and new urban communities, and the precautions to guard the invalids who now reach British Columbia in numbers."

VARIATIONS IN THE QUANTITY OF UREA IN THE BLOOD.

AN interesting monograph on the amount of urea in the blood, based upon observations in 211 cases, has been published in the *Archives of Internal Medicine* by Dr. Harold Schwartz and Dr. Caroline McGill. A review of previous work on the subject is given, from which it would appear that increased urea in the blood was demonstrated as long ago as 1823 by Prevost and Dumas working with nephrectomised animals, while Bostock in 1829 noticed an increase in the blood urea of certain patients with albuminuria, an observation confirmed in 1836 by Bright and his co-workers Prout, Babbington, and Christison. Since 1899 a number of observations have been made upon the quantity of urea in the blood in health and disease by different methods, the results of which are summarised in this paper. Dr. Schwartz and Dr. McGill have used the urease method of Marshall in their investigations. They first made some observations upon the blood urea in normal cases, which they found during fasting to vary from 0·108 to 0·252 gramme per litre. In cases of lobar pneumonia there is usually an increased blood urea value, and very high values indicate a bad prognosis. In syphilis about one-half of

[1] THE LANCET, vol. i., 1915, pp. 505, 870.

the cases show an increased percentage of urea in the blood, but no relation was found between the Wassermann test and the amount of urea. In exophthalmic goitre the blood urea is increased, while in myxœdema it is diminished. A definite increase was found in most of the cases of the following diseases: Primary anæmia, nephrolithiasis, pyelonephritis, pyonephrosis, septicæmia, streptococcic meningitis, Rocky Mountain spotted fever, pulmonary tuberculosis, diabetic coma, intestinal obstruction, malignancy, and common duct obstructions. No changes were found in the following diseases: Psoriasis, pityriasis rosea, epilepsy, meningococcic meningitis, diabetes, and functional neurosis. No relation was found to exist between blood pressure and the amount of blood urea. The phthalein test of renal function was carried out in 96 cases, and it was found that the percentage of phthalein excreted was diminished along with an increase in the blood urea. We have read the important paper by Dr. Schwartz and Dr. McGill with special interest, and regard it as a noteworthy contribution to the subject.

EUGENICS AND WAR.

IT has been asserted by some that war is a phenomenon necessary for the development of humanity and for social evolution—that collective assassination is a source of progress, since in the struggle the stronger races survive, while the weaker succumb and disappear. They regard war as a phenomenon of natural selection which justifies and confirms Darwin's theory, or as a hurricane which purifies the social surrounding, uprooting weak and parasitic growths, leaving the earth free to nourish only those more robust and worthy of living, and imparting ozone to the social atmosphere. Again, and from a more directly medical point of view, they consider war as a blood-letting process which depletes society, making the activity of each part more effective to the advantage of the whole. Dr. Dragotti, in a recent issue of *Il Policlinico*,[1] combats this view, saying that it would be difficult to find at the present day, and in any part of the world, even in those countries which are immune from the scourge, anyone who would have the courage to affirm that the war imposed on the world by the sins of a military caste is a bestower of progress and benefit. There can be no doubt that war, and specially the present one, multiplies the disastrous effects of all the factors of decay in the human race. The sole advantage from the point of view of eugenics has been the suppression of alcohol, but it is doubtful whether after the war vodka, absinthe, and beer will not take their place again among the vicious habits of man. Toil, discomfort, and innutrition not only light up hidden foci of tubercle, but afford a favourable soil for the implantation of germs, the diffusion of which is greatly favoured by overcrowding in barracks and workshops. Still more serious in diffusion and effect are the neuroses. Oppenheim, who in the early period of the war found cause for congratulation in the extraordinary resistance of the nervous system in his compatriots, had afterwards to confess that in the space of a few months he had come across a number of neuropathics largely in excess of that observed during the whole of his career. Nor is the organism of woman, the static element and preserver of the characteristics of the race, spared by war, which tends to lower the physical value even of the non-combatants. So far Dr. Dragotti's thesis is difficult to assail, but his opinion that morality is not rendered more robust by war will not be universally shared. He argues that if the spirit of sacrifice reaches the sublime, on the other hand the men whom the war has turned into homicides, thieves, incendiaries, and violators cannot return to civil life as more moral beings. After the slaughter of the French Revolution and after the Napoleonic wars in France there arose a time of luxury. Men, satiated with blood and strife, gave themselves over to pleasure; the women, now in excessive numbers relatively to the opposite sex, increased their wiles and their vices; France abandoned herself to the most unbridled libertinage. A similar position, we must admit, has been observed after many collective disasters, and the phenomenon was witnessed after the earthquakes in Calabria and Sicily. Certainly history does not prove that victorious races are necessarily worthy of a greater civilisation, and the rest of Dr. Dragotti's arguments are incontrovertible. The struggle for existence in races is not shown only in a destructive competition between individuals of the same or allied species, but, in the human race, assumes rather the form of a struggle towards well-being, a struggle by which man tends to subjugate the forces of nature, and despoil them for the benefit of the community, a struggle in which the individual sacrifices himself for the general good. In war, on the other hand, man destroys himself and his works and enfeebles the future generations in the conflict which they will have to wage against nature. War is antagonistic to eugenics. It is not like the storm that uproots parasitic plants, the hurricane which purifies the atmosphere, but is the whirlwind that shatters the forest trees, beats down the corn and devastates the fields where nettles will afterwards flourish. War is not a reviving blood-letting, but an exhausting hæmorrhage, which blanches the life-producing organs and prepares the soil for the development of pathogenic germs. War scatters the seeds of disease, sorrow, hate, and death, all of which cause the deterioration of the race.

[1] Il Policlinico, Practical Section, Feb. 20th, 1916.

THE honorary secretaries of King Edward's Hospital Fund for London issued a statement last week to the effect that hospitals in the County of London or within nine miles of Charing Cross desiring to participate in the grants made by this Fund for the year 1916, must make application before March 31st to the honorary secretaries, 7, Walbrook, E.C. Applications, they add, will also be considered from convalescent homes which are situated within the above boundaries, or which, being situated outside, take a large proportion of patients from London, as well as from sanatoria for consumption which take patients from London, or which are prepared to place beds at the disposal of the Fund for the use of patients from London hospitals.

THE Annual Oration of the Medical Society of London is to be given this year by Sir StClair Thomson, who has selected for his subject Shakespeare and Medicine. The date has been fixed for Monday, May 1st, so as to bring the oration into line with the official Shakespearian celebrations.

THE Wellcome Historical Medical Museum, 54A, Wigmore-street, Cavendish-square, London, will be closed for cleaning from April 1st to April 30th inclusive.

FOOD ECONOMICS IN RELATION TO THE WAR.

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I.

AT the present juncture the nation needs to keep in view three prime desiderata—the forging of the most effective weapon of war, the maximising of wealth production on farm and in factory, and the minimising of wealth consumption. The activities of every citizen should be organised with these three ends in view.

As regards production, let us remember that wealth is in the main the product of man's intelligence and industry. This is even true of commodities such as coal, which nature has already made for us. The value of coal is represented by the money it will fetch, and this increases with every stage in its transit from mine to cellar. In the seam it is worth, say, one shilling and sixpence a ton, at the pit's mouth three shillings and sixpence, and in the cellar, say, thirty shillings, and these differences in value represent the skill and labour spent upon it.[1] And so with wealth in general. It is mainly produced by work, whether of brain, or muscle, or both combined. It is imperative that the nation should realise this truth. Most of us can do something, directly or indirectly, to increase the national wealth. There is a large number of people in this country whose services are unutilised. Thousands of women might, for instance, be profitably employed on the land in increasing food production. It would be difficult to exaggerate the importance at the present time of producing all the wealth we can and of reducing its consumption to a minimum.

So far as concerns consumption, the Central Powers are more fortunately situated than we are, since they are, and have been almost from the outset of the war, compelled to economise. This is not the case with us. Our ports are open, food and luxuries are plentiful, money abounds; but instead of profiting by this plenitude and saving our excess, we are consuming it all too lavishly and thus increasing the debit side of the national account. In spending money it has become a duty always to consider how far we are thereby diminishing the national wealth or directing industrial activities into undesirable channels. As regards production, our chief concern should be to increase the home production of food and (apart from war essentials) the manufacture of articles for export.

Large Individual Expenditure of Money not Necessarily Wrong.

The mere spending of money does not necessarily diminish the nation's wealth. From the standpoint of national economy it is not, e.g., extravagant for a person to give a large price for a landed property in this country, or for a picture, a piece of old lace, or even for a Pekinese pup; nor to pay a liberal fee for medical or surgical service. Transactions of this kind involve a transference, not a consumption of wealth. When, however, a person consumes an unnecessary amount of food, coal, or petrol, he actually wastes the national wealth. The fact is, the expenditure of money, nationally considered, is only harmful when it leads to an unnecessary consumption of wealth, or when it diverts industrial energies from urgently needed purposes, such as the perfecting of the war machine, the manufacture of goods for shipment abroad, or agriculture.

Just now our people need to exercise great care in the matter of spending money. It is obviously wrong to consume food, coal, or petrol unnecessarily, to make elaborate house improvements involving skilled mechanical labour, or to order elaborate dresses and thus use up energies which might be employed more suitably in other directions, such as the making of munitions. On the other hand, the judicious expenditure of money on certain articles which are not altogether necessary, such as children's toys, may be advantageous if it serves to promote home industries.

Let me give an instance of how those possessing the means may legitimately spend money on themselves and their dependents, not only without appreciably diminishing the national wealth, but with advantage to themselves and to the community at large. Some seaside places, notably those on the East Coast, have recently suffered greatly from the dearth of visitors. Now a person need not consume any more of the nation's wealth at the seaside than at home. His chief extra expenditure goes in travelling and lodging, but this extra amount represents an exchange rather than a consumption of wealth; he need not consume any more food, or wear out any more clothes at the seaside than at home. The effect of his visit, so far as the national wealth is concerned, will be to transfer some of that wealth from a part of the country where it is less needed to one where it is more needed. Healthy able-bodied people, on whose services the country has an urgent claim at the present time, should not, of course, think of holidays, but others, notably children and their wards, are more than justified in making their annual holiday excursions.

Food the Most Important Form of Wealth.

Wealth is defined by the political economist as that which ministers to man's need and happiness, and is at the same time get-at-able (gold in the moon would be worth nothing) and limited in quantity (the air we breathe, though necessary to life, does not constitute wealth).

Now of all forms of wealth there is one which stands out as much the most important, in that it is the one and only indispensable form—I mean, of course, food. Man could go on living without clothes and even without special dwellings, but without food life would be impossible. Hence it is that the farmer who tills the soil and raises flocks and herds and poultry, and the fisherman who reaps the harvest of the seas are the most necessary members of the community. They it is who have rendered civilisation possible by setting free a large section of the community to devote their energies to other purposes than the getting of food and thus rendering a complex division of labour possible. I never see a peasant working in the fields or a farmer directing his operations without feeling the importance and dignity of their calling.

Food Production.

The most important difference, industrially considered, between primitive and civilised man lies in

[1] It is true that the middleman intervenes to swell the price of coal to what may appear an unnecessary degree. It has to be remembered, however, that, under present conditions at least, he constitutes a necessary part of the machinery of distribution, and that his profits, although they may be deemed excessive, do actually represent some degree of "skill and labour."

the source of their food. Primitive man obtained all his animal food by hunting and fishing and all his vegetable food from the uncultivated vegetable kingdom, and the daily search for and preparation of the food kept the entire primitive community—except the very young children—so constantly employed that there was little time for any other occupation. Hence there was no division of labour except in so far as the men were employed in hunting and fighting and the women in tending the children and in collecting and preparing the vegetable food. Civilised man, on the other hand, produces practically the whole of his food artificially by cultivating the soil and breeding live stock, and so successful is he in this that quite a small section of the community is able to produce sufficient food for all, thus liberating a vast amount of human activity which can be devoted to other ends and rendering a complex division of labour possible. What is the exact proportion of the world's population engaged in the production of food I cannot say. It is certainly small, and it will tend to get less and less with the improvement of farming and the increased employment of machinery. Consider the fact that with the help of a reaping machine and a couple of horses one man can do the work of ten men using the scythe. The fact that so small a section of the community can provide food for all convinces me at least that, by a proper world organisation of human activities, it would be possible to place a sufficiency of food within the reach of everyone. No section of the world's population need ever be at starvation point, except as the result of some catastrophe. The like is true of the other primary needs of man. Take, for instance, the housing question. That by a proper organisation of human endeavour everyone might be provided with a comfortable dwelling is certain. We at this moment are spending, and very rightly spending, some £5,000,000 daily in warfare, a sum which would suffice to build 10,000 cottages at £500 a piece, or something like 3,500,000 in a year!

Imported Food.

Food is annually imported into this country to the value of some £330,000,000. This constitutes an external debt which, now that we are under such a colossal war expenditure and now that our export trade has fallen so greatly, it is imperative that we should reduce to a minimum. To this end it is evident that we should bestir ourselves at one and the same time to increase the supply of home-grown food and to economise in every way the consumption of food.

The Supply of Home-grown Food.

The question of increasing the supply of home-grown food is now engaging the attention of the Government, who doubtless have at their disposal the best available expert opinion. Such suggestions as I have to offer on the matter are merely those of the man in the street; yet they will not be useless if only they serve to awaken the country to the fact that we have it in our power greatly to increase the yield of our soil, and that it is urgently necessary to set about doing so at once.

Anyone who has studied, even in a casual way, the condition of farming in this country must be convinced that the actual food production is much below the maximum possible, and it is clearly our duty to correct this unsatisfactory state of things. Mr. Charles W. Fielding, who has studied this question carefully, goes so far as to say that England might be made to yield sufficient food for the entire population. This does not necessarily mean—I may say by the way—that we have acted altogether unwisely in the past in not developing our agriculture and stock-breeding resources to the utmost. According to a well-known principle of political economy it is best that commodities should be produced just where they can be produced most economically, and we have hitherto been able to get some two-thirds of our food more cheaply from abroad than we could produce it at home, an arrangement which has enabled a large number of those who would otherwise have been employed on the land to enter factories, shipyards, and the like, and to produce wealth other than food; and the country has so far thriven under this system that it has been able to save annually from three to four hundred millions sterling. While, however, the neglect of home farming may have been in some measure justified in the past, it certainly is not justifiable at the present time. Every extra sovereign's worth of food produced by us means so much added to the country's wealth.

Our comparatively small output of food is due to three main causes: the large amount of unused land; the using as pasture of land which should be tilled, especially for the purpose of growing wheat; and, finally, bad farming. There is an immense acreage of productive ground lying waste. Corners of cultivated fields are left untilled; the cartroads and right-of-way paths across them are often unnecessarily wide; thousands of acres of grass land by the roadside and on railway embankments are wasted. Much of this would serve as pasture, if for nothing else, for goats, which with the addition of a little corn to their pasture food yield a rich milk from which the famous camembert cheese is manufactured. Many a roadside patch, as the French or Swiss peasant would not fail to show, would afford good pasture for a cow. The animal would be under the care of a woman, and while the one was making milk out of grass the other would be using her hands for some equally useful purpose. Government is using its influence to induce the farmers to grow wheat on the poorer pasture lands, and I need say no more on this head.

Much of the land in this country is badly farmed. Not only is it imperfectly manured and fertilised, but vast tracts of what might otherwise be first-class pasture land are over-run with nettles, thistles, and rushes, or covered with ant-hills, and much of the cultivated land abounds in weeds. Not long since I gathered within a few square yards of a turnip field no less than 28 different kinds of weeds, either in flower or seeding, and within a few miles of this spot more than 100 gardeners were employed in trimming lawns and flower-beds. Labour spent in improving pasture land—in destroying nettles, thistles, and rushes, and "banking" ant-hills, and in clearing cultivated land of weeds—results in a direct increase in the national wealth, for the better the pasture the greater number of sheep and cattle which it can feed, and the cleaner the cultivated land the more abundant is its yield. Now it is quite evident to me that even without any intensive cultivation—simply by utilising unused land, by cultivating the poorer pasture lands, and by putting more labour into neglected pasture and cultivated land—our supply of home-grown food could be greatly increased, and that very soon. *All that is needed is the necessary labour and capital.* I do not advocate small holdings at present. The time may come when it will be possible to work them profitably; hitherto most of them have in my experience proved failures. For the present at least it is best to work as far as

possible on existing lines—to help our farmers by placing the necessary capital and labour at their disposal. An ample supply of men and women is, I feel assured, available without causing any serious dislocation of our industrial organisation. It is simply a question of transferring labour from where it is less needed to where it is more needed, from occupations creating little wealth to an occupation capable of creating much wealth.

I do not propose to indicate in detail the sources from which the necessary labour can be supplied. The men and women must be drawn from occupations in which their services are not for the present urgently needed. I will mention just a few of them by way of illustration. There are many men working off the land who might well be spared to it. Take, for instance, house painters and decorators. Much of the work now being done by them is unnecessary, or could, at all events, be left until after the war. I have myself recently seen numbers of men engaged at "pointing" brickwork, at best a somewhat stupid occupation, hardly more sensible, in many cases at least, than the once fashionable custom of painting oak so as to imitate an inferior wood. To be sure, the men engaged in furbishing up houses are in a sense increasing the wealth of the country, since a house newly done up is more valuable than one which is in need of repairs; but no one would contend that they increase it in the same sense as the farmer who produces food. These men, being accustomed to hard work, do not easily tire, and under proper direction are capable of doing work now urgently needed on the land. The sovereign a week which they would earn would go as far in the country as 30s. or more in town, and I cannot but think that a change to the country would be as agreeable to them as it would be healthful. Then as regards women, there must be many able and willing to lend a help on farms, and among these I should expect to find not a few gentlewomen. A fair proportion of women could be released from laundry work. This is not a time for glazing shirt fronts[2] and "getting up" elaborate frocks. Again, there is a large army of women engaged in millinery and dress-making who assuredly would be more profitably employed in increasing the nation's wealth than in helping to deck their leisured sisters with unnecessary finery. As a matter of fact many women have, owing to war conditions, recently been released, not only from millinery, fashionable dress-making and boot-making, but from other "peace" trades, such as upholstering; and quite recently there were many thousands of women on the Labour Exchange seeking work, and even a larger number on the special war register. It may be argued that women are not strong enough to do farm work. This argument has little force, for from the first dawn of agriculture most of the work on the land has been done by women, and on the continent to this day much of it still is. It is probable that at the present time most of the farm work in Germany and Austria-Hungary is in the hands of women. We have ample evidence in our own country that women are capable of hard work. All healthy young women are strong enough for domestic service and hospital nursing, both of which make a considerable tax upon the powers of endurance. No doubt those belonging to the leisured classes or engaged in only light occupations would take some little time to get accustomed to work on the land, but they would soon become adapted to it and find their reward, not only in the sense of duty done, but in improved health as well. Naturally women would not be expected to do heavy work, but there is much light work, such as hoeing, required on the land.[3] There should be no difficulty in providing accommodation in the villages for the extra farm hands.

As regards the question of wages, those farmers who have not sufficient capital to avail themselves of extra labour should be able to borrow money from the Government on easy terms. A few millions spent in this way would be well spent, inasmuch as the expenditure would not lead to any extra consumption of national wealth, for in any case the extra farm workers would have to be fed and clothed somewhere, and they would not eat appreciably more or wear out more clothes on the land than elsewhere. The only difference, financially considered, would be that the money needed to maintain them would be found by the nation at large instead of by sections of it, such, e.g., as those who desire freshly painted houses, glazed shirt fronts, and pretty frocks.

(To be continued.)

[2] It takes one hour's strenuous work to glaze a single shirt front.

[3] The National Political League and other organisations are now doing good work in training women for farm work.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Education of Imbecile Children.

AT the fifty-fifth annual meeting of the subscribers and friends of the Scottish National Institution (Larbert) for the Education of Imbecile Children, the annual report of the superintendent stated that the number of pupils on the register at the end of the year under review was 432 (415).[1] This, however, was not the full measure of the increased work done in the institution. The average daily number in residence was 420 (388); the highest number on the register on any one day was 437, the lowest 415. There had been a great change in the population during the year, 102 (81) cases having been admitted, and 60 (37) having been discharged. In the directors' annual report the decision was recorded to proceed with the building of the nurses' home. The need for better accommodation for the staff had been pressing for some years. In spite of scarcity of men and material, a considerable part of the building was already up to roof level. The financial position of the institution was at present satisfactory, the strain of the war having not yet been seriously felt. That had been due to the existence of contracts made before the war and to purchases made at pre-war rates. This year, however, a great increase in the cost of maintenance was anticipated.

Infantile Death-rate in Dundee and its Prevention.

Dr. C. Templeman, the medical officer of health for Dundee, in his twenty-second annual report states that the estimates of population for the city show a birth-rate of 22·15, the lowest on record, a general death-rate of 21·18, and a death-rate of infants under 1 year of 209 per 1000 births. In 1914 the death-rate was lower than any recorded for the previous ten years; in 1915 it was higher than it had been for 20 years, due principally to an increase of deaths at both extremes of life. In the case of children under school age the increase was almost entirely accounted for by a severe epidemic of whooping-cough and measles, and the

[1] The corresponding figures for last year are given in brackets.

respiratory diseases accompanying such an outbreak. The same factor had been responsible for the high death-rate of infants in the first year of life, and Dr. Templeman considers that his analysis of the serious infant mortality may dissipate the alarm caused by what is, even for Dundee, a most abnormal figure. As in all industrial centres, about one-third of the total first-year mortality generally occurs in the first month and fully one half in the first three months of life; but in 1915, as showing the abnormal conditions which existed, the excessive mortality occurred in the second six months of life. Dr. Templeman considers that the main causes of the high infant mortality in Dundee are poverty, bad housing, intemperance, and ignorance, carelessness not being so important a factor as had been alleged, except perhaps in the lowest stratum of the population. The incidence of diarrhœal and digestive diseases has been high in hand-fed children of the poorer classes living in houses where there is no provision for storing milk. The milk is generally kept in an open vessel, not even covered, and in many of the houses the defective ventilation and the presence of ashpits and filth in closed back courts provide the housefly with plenty of material to contaminate the milk. Last year 39 of these deaths occurred in houses of one room, 72 in houses of two rooms, 15 in houses of three rooms, and 2 in houses of four rooms, and none in houses of a larger size. The work of the health visitors and baby clinics is commended, and the following suggestions are made for the consideration of the Council: (1) The appointment of a certificated midwife as inspector of midwives; (2) the appointment of two additional health visitors to devote their time exclusively to infant- and child-welfare work; (3) that the Local Government Board of Scotland be approached to enforce a system of compulsory notification of measles on the lines already in force in England; (4) the medical officer of health to be empowered to engage trained nurses temporarily to visit all infected homes; (5) the management of the infirmary to be asked to institute prenatal clinics in connexion with the maternity hospital and to set aside a few beds for the treatment of the complications of pregnancy; (6) that the committee should consider the advisability of an extension of the work at present being carried on by the Infant Welfare Committee of the Social Union; (7) the district registrars to continue the distribution of leaflets dealing with infant hygiene—these to be explained by the health visitor to the mother; and (8) the provision of municipal crèches.

Babies' Open-air Playroom in Edinburgh.

A scheme was set on foot some months ago to find out what exercise, cleanliness, and discipline would do, from a health point of view, for the child of 1½ to 4 years. Mrs. Hope, the superintendent, reports that the children came to the playroom at first dirty, ragged, and verminous. To reach the mother through the child had been the aim of the promoters, and so far this object had been gained. The effect of movement and cleanliness on the child's health is testified to by the superintendent, who says: "Many mothers have told me of the extraordinary difference, mental and physical, in their children since they started to come to the playroom. The listless, apathetic, voiceless child has been turned into a bright, romping, talkative urchin, who is beginning to see that life is worth living after all. I get quite long conversations out of the little mites now that once sat in a silent heap on the floor."

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Resection of the Elbow in Gunshot Injury.

M. Quénu introduced at the Society of Surgery a report by M. Leriche on resection of the elbow. M. Quénu classifies these resections into three categories: (1) Immediate—i.e., within 24 hours, when a free excision must be done; (2) secondary, in the presence of an acute arthritis; (3) late, to remedy a persistent bony fistula or a bad ankylosis. M. Leriche prefers to resect at once whenever an elbow has been struck by a bullet, even when no infection has taken place, since complete ankylosis always follows. M. Quénu, from a recent experience of a dozen resections, distinguishes between two kinds of useful arm. In the one the distal muscles are retained and permit of active movement. In the other this is not the case. M. Leriche thinks that resection should be followed by careful and progressive mobilisation without apparatus. In his experience a difficult period of treatment succeeds the early improvement before final success is assured. M. Quénu exhibited such a satisfactory case of resection in his own practice.

Acute Rheumatic Endocarditis and Pericarditis at the Front.

M. Nobécourt and M. Peyre have frequently observed endocarditis and pericarditis in soldiers at the front, especially among the younger men of 20 to 22 years of age. Articular rheumatism is recognised as the principal cause. In its course cardiac complications are as frequent in young soldiers as in children. The incidence is practically identical. In neither case does Baillot's law hold, and serous inflammation of the heart is not confined to the febrile generalised form of rheumatism, but frequently occurs in slightly febrile or even afebrile, and in non-articular forms. Cervical rheumatism appearing simply as a torticollis is also often the cause. This predisposition to infection of the endo- and peri-cardium need cause no surprise, for in young folk of 20 to 22 years the body has not yet reached its full development and acquired the relative stability characteristic of the adult. The heart of the young soldier must then be carefully examined, not merely for symptoms of frank articular rheumatism, but also for less well-marked febrile affections. Cervical rheumatism may easily pass unnoticed if attention is not specially directed to it. Experience shows that even these cardiac cases require care and appropriate hygiene long after the acute period. From the point of view of military fitness no hasty decision can be made. In many cases of isolated pericarditis a complete and rapid cure follows a period of careful treatment. Endocarditis occurring in the army zone necessitates evacuation to a base hospital where the treatment can be followed up to recovery or the establishment of definite valvular disease. In the first case the soldier may remain in the service undergoing a methodical training before his return to activity. In the second he will be temporarily invalided or relegated to the auxiliary service.

Treatment of Trench Enteritis by Condensed Milk Diluted with Rice-water.

Dr. Lassablière has tried on adults suffering from enteritis following service in the trenches a method which has given in his hands excellent results in the enteritis of children. This consists in administering to the subject one to two litres of milk

obtained by diluting one part of condensed milk with four of rice-water. The author has treated 256 persons, the subject of acute enteritis arising in the trenches, of which the symptoms were extremely grave—stools very frequent, containing mucus or blood, tenesmus being present, and the general condition bad. The medication with condensed milk diluted with rice-water results in a rapid diminution within a few days of the number of stools from 30 in the 24 hours to a single one, an alteration of their character, disappearance of blood (in one to three days in 84 per cent. of cases), of mucus and of fetor, a rapid improvement of the general condition, and an absence of any tendency to the relapse which often attends the return to solid food. Finally, a diminution by one-half in the duration of the stay in hospital was the result with a consequent similar reduction in the disability of the combatants. Dr. Lassablière insists on the practical character of this medication, at the same time simple and efficacious, and on the advantages of condensed milk in campaigning, due to its small volume, the facility of transport, ease of keeping, and absence of fraud. Rice-water is also easily prepared at the front.

March 20th.

THE INSURANCE COMMISSIONERS AND SURCHARGING FOR EXTRAVAGANCE IN PRESCRIBING.

WE have been furnished by the courtesy of the Insurance Commissioners with reports of their decisions in three appeals by medical practitioners surcharged by Insurance Committees in connexion with alleged extravagance in prescribing. The following summaries will call attention to the more important of the questions raised and will indicate some of the principles which should govern Insurance Committees in dealing with these matters.

CASE 1.—Surcharges had been made affecting 16 practitioners of whom 13 actually appealed. Representations as to excessive prescribing had already been made when the Panel Committee came into existence in April, 1914, and in July, 1914, acting jointly with the Pharmaceutical and Insurance Committees it instructed Mr. X. a pharmacist, to make an analysis of the prescriptions given and to report. He made two reports, the first being a statistical analysis showing as its result for all the doctors in the area the average cost of drugs per person attended, the average cost per prescription, and the average cost per insured person, and, in the case of certain doctors, the extent to which they had exceeded the average cost per patient of all the doctors on the panel taken together. The 16 doctors complained of were those who had thus exceeded. In Mr. X's second report he gave particulars of prescriptions given by these 16 doctors which appeared *prima facie* to be specially expensive. The Panel Committee having received the first report invited the 16 doctors to a conference at which extravagant prescribing was discussed, but no attention was drawn to individual prescriptions, and no opportunity to explain or justify them was given, and a report in general terms to the Insurance Committee, naming no doctors, followed. This was considered with Mr. X's two reports by the Insurance Committee, who decided that there had been excessive prescribing by the 16 doctors and surcharged them on the basis of the general average of the area. Nine of these appealed to the Commissioners, who wrote pointing out that the report of the Panel Committee above referred to did not set out for the information of the Insurance Committee the facts of individual cases or the grounds upon which the Panel Committee considered the cost of the prescriptions in question exceeded what was reasonably necessary for the adequate treatment of the patients. It was also pointed out that a panel committee's report should give not only details upon which to base a surcharge but a recommendation as to what that surcharge should be. The Insurance Committee was advised that it should have referred back the report to the Panel Committee, and was requested to do so. The Panel Committee accordingly made a second report dealing with the 16 doctors in detail, but this was referred back to it by the Insurance Committee with a request that it should see the doctors involved and report again. The doctors again attended before the Panel Committee and gave general explanations, but were not asked to discuss particular prescriptions in relation to the patients prescribed for, the Panel Committee or its chairman considering that this would amount to undue interference with the doctor's treatment. After a series of meetings the Panel Committee confirmed the findings of its second report, and the Insurance Committee having adopted it the final appeal to the Commissioners took place. On behalf of five of the appellants the following points were taken and decided by the Commissioners. 1. That the regulations dealing with surcharges were *ultra vires* of the Act. The three Commissioners appointed by the Insurance Commissioners under the regulations to hear the appeal deemed it outside their province to consider this. 2. That the Panel Committee had no power to deal with surcharges antecedent to its own institution. Held, that the regulations in this respect are retrospective. 3. That the surcharges first made were decided by the Commissioners to be bad, and that so the matter was concluded and could not be reopened; and (4) that the Commissioners could not remit the matter back to the Insurance Committee. Held, that these points were covered by Article 51 of the Regulations, which empowered the Commissioners to determine an appeal "in such manner as they think fit." 5. That the Insurance Committee had no power to delegate the consideration of the Panel Committee's report to its Medical Benefit Subcommittee. Held, that this was covered by the National Health Insurance (Insurance Committees) Regulations (England), 1912. Upon the question whether the procedure of the Panel Committee was so defective as to have seriously prejudiced its conclusions, the Commissioners pointed out that the Panel Committee appeared simply to have considered how a deficiency in the Drug Fund had come about and how it could be made good, which did not concern it. The question for it to consider was whether the cost of drugs ordered by individual doctors for their patients exceeded what was necessary for their adequate treatment, not merely whether certain doctors had prescribed at greater cost than others. The Panel Committee had acted on the opinion that it was not proper to ask a doctor why in the treatment of particular cases he had prescribed drugs at what, *prima facie*, seemed to be an excessive cost, and the Commissioners held that this was a mistaken view.

While deciding that the failure of the Panel Committee to appreciate its duties had caused the imposition of surcharges which the methods of the inquiry held did not justify, the Commissioners considered that upon the evidence before them they could deal with the questions raised without referring them back again, and proceeded to do so, accepting the explanations as to their prescriptions given by three of the doctors and deciding to make no deductions in the cases of eight others, the cases as against six being treated as not established and against two only in respect of their having "ordered drugs to be supplied to insured patients who were seen by them when on the point of starting for a voyage" (presumably in connexion with active service). In the cases of two others it was held that there had been carelessness in repeating prescriptions, with the result that drugs had been ordered in excess of what the doctors themselves regarded as necessary, and deductions were accordingly ordered. One doctor had raised the point that his prescriptions had been wrongfully treated statistically, and this was acknowledged to be so, but he had also exceeded in the matter of cost in individual prescriptions, and had urged in excuse that he had prescribed for insured patients on the scale that he was in the habit of using for others. It was pointed out that this did not prove that he was not extravagant, and a substantial deduction was ordered.

CASE 2.—In this case a medical man had been surcharged with regard to prescriptions in which certain drugs were used which had been treated as unduly expensive. The Panel Committee had appointed a subcommittee of five of its members to hold an inquiry, and the doctor had attended before the subcommittee when the question of the drugs referred to was raised, but there was some divergence of

evidence as to whether it was fully gone into. The subcommittee reported to the Panel Committee, which in its turn made a report recommending a surcharge, and this the Insurance Committee adopted, informing the doctor and telling him that he could appeal to the Commissioners. At the hearing of the appeal it was argued on behalf of the doctor that the Panel Committee had no power to delegate its inquiry to a subcommittee. The Commissioners held as to this that it was a competent and also convenient course, and that the regulations could not be construed so as to preclude the Panel Committee from adopting it for the investigation of matters of detail. With regard to a further point raised, however, that the Panel Committee had not heard Dr. X before making its report, the Commissioners held that the Regulations gave the medical man the right to appear before the full Panel Committee, and that any delegation of its duty which deprived the medical man of that right would destroy the character of the investigation contemplated by the Regulations. In directing that the Insurance Committee should refer this case back to the Panel Committee, the Commissioners called attention to the terms in which the report presented merely made recommendations that the doctor should be surcharged a certain percentage in respect of certain drugs and bandages. The Commissioners said: "This report does not set out the facts of the case for the information of the Insurance Committee. There is not a word as to the circumstances in which the drugs and appliances were ordered, nor is the reason for the surcharge stated. It does not appear except by inference whether the excess was in respect of the character or the quantity of the drugs and appliances." In further indication of the course to be followed the Commissioners added: "In this case the Panel Committee ought to ascertain the doctor's reasons for ordering the drugs and appliances in question, and if they consider such reasons inadequate they should state their grounds for so doing."

CASE 3.—In this case a deduction of £77 6*s.* 10*d.* had been made from the amount due to a medical practitioner who had appealed. The Commissioners deputed to hear the appeal found that the Panel Committee had before them statistical tables showing the average price per prescription, the average cost per insured person, and other information both in respect of all the doctors in the area and in respect of each doctor separately, as well as analyses of particular prescriptions apparently excessive in cost. The doctor had appeared before the Panel Committee and given explanations. The Panel Committee stated that it had recommended the above surcharge or deduction amounting to 25 per cent. of the cost of the whole of the doctor's prescriptions for the period named as "an arbitrary but perfectly fair estimate."

The Commissioners disagreed with the contention on behalf of the doctor that the grounds surcharging him were "purely mathematical," and considered that statistics showing that a doctor's prescriptions had exceeded considerably the average cost obtaining in the area in which he practised constituted *prima facie* evidence of extravagance, which it was open to him to rebut. Explanations as to individual prescriptions had been duly heard by the Panel Committee, and the doctor's own evidence before them satisfied the Commissioners "that he habitually did not take into his consideration, nor did he apparently think it any part of his duty to take into consideration, the cost of drugs ordered by him." They considered that the committee was justified in its conclusion that there had been extravagance in quantity and quality. The Commissioners, however, questioned the principle upon which a deduction of 25 per cent. had been ordered. The facts did not appear to the Commissioners to bear out the finding, and they went on to say, "Extravagance of this character, while its existence may be indisputable, is very difficult to bring to a precise measurement in pounds, shillings, and pence." They came to the conclusion that "the committee is given a discretion in fixing the amount of the deduction, which is to be such a sum as they may think fit—that is to say, as, having regard to all the circumstances of the case, they may think fit." In the case before them the Commissioners decided that a deduction of £25 would meet the requirements of the regulation, and would not be open to any doubt as to the validity of the estimate made. The Commissioners further referred to an objection taken to the Insurance Committee having delegated to the Medical Benefit Subcommittee the consideration of the Panel Committee's report, and held as to this that by Section 65 of the Act of 1911 all regulations made under the Act are to have effect as if enacted in the Act. All regulations thus made must therefore be read together and the power of delegating given by the National Health Insurance (Insurance Committees) Regulations (England), 1912, would in this way extend to duties imposed upon Insurance Committees by any regulations in which a contrary intention is not expressed. The Commissioners were therefore satisfied that the objection could not be sustained.

PHYSICAL TREATMENT FOR DISABLED SOLDIERS.

SINCE the leading article on the subject of physical treatment for disabled soldiers appeared in our issue of Feb. 12th, further light has been thrown on the subject by a perusal of the confidential monthly bulletin issued by Dr. Jean Camus, Chief of the Central Service for Physical Treatment in the Military Government of Paris, as well as of a report on the installation at the Rue d'Artois by Dr. Quiserne, the Chief of the Service there.

Results of the physical treatment.—The results claimed are even more striking than had been supposed. A very large proportion are cured or so greatly improved that they are rendered again fit for military service. During the month of December, for example, 84 per cent. of the officers and men discharged were thus fit after a mean duration of treatment of 40 days. Apart from military efficiency, it is easy to see what a saving in grants and pensions such a result implies. The insurance companies of Paris have not been slow to recognise this fact, and the installation at the Rue d'Artois is administered by M. Fontaine, Vice-President of the Society for Accident Insurance, which has for a long time provided mechanical treatment for the results of accidents.

Diminution of incapacity.—For the month mentioned the mean diminution of incapacity for the officers and men discharged after completion of treatment was 27 per cent. In France, as on the continent generally, it has long been customary to estimate the incapacity for insurance purposes by a percentage. The *Guide-Barème des Invalidités*, published in Paris,[1] gives the official figures as fixed by the Ministry of War, in a decree dated March 24th, 1915, followed by an instruction of April 20th, 1915. Medical experts are instructed to refer to this list for the figures of reduction of capacity for work entitling to a gratuity or pension. To make this clear by an example: ankylosis of the carpo-metacarpal articulation of either thumb is given as a 20 per cent. invalidity; the loss of the fingers of both hands except one as 100 per cent.; the loss of the ungual phalanx only of the little finger as 2 per cent., and so on. Results calculated on this basis have therefore an objective and strictly comparative value. A 27 per cent. mean diminution of incapacity as the monthly output is an objective factor which cannot be gainsaid.

Illustrative cases.—Two illustrative cases may be given from Dr. Quiserne's report.

1. A captain was wounded on March 24th, 1915, on the inner side of the right hand by the bursting of a shell, without injury to the bone. Grave septic infection followed with involvement of a flexor tendon. The limb was immobilised for 3½ months. On admission to the institute there was functional impotence of the right hand. The little finger was flexed at an angle of 90°, like a hammer. On the palmar aspect of the hand a large fibrous cicatrix hindered flexion of fingers and wrist. The prognosis was stated to be doubtful; incapacity of the limb assessed at 60 per cent., and the general incapacity 45 per cent. Treatment by *eau courante* daily for 20 minutes at 46° C., with massage of fingers, hand, wrist, and forearm. Manual mobilisation, followed by mechanotherapy with a series of apparatus amounting to 31 treatments. After 23 days the paresis of fingers and forearm had nearly gone. A plastic operation to sever the contracted tendon was necessary. After 3½ months the patient was returned fit for active service. The movements of the hand were sufficient, the incapacity now being assessed at 15 per cent. for the limb and 6 per cent. in general.

2. Fracture of the lower end of the left femur by a bullet had occurred on Jan. 6th, 1915. The wound was infected and followed by phlebitis and œdema of the limb, necessitating

[1] Paris: Henri Charles-Lavauzelle. Edition militaire. 124, Boulevard St. Germain. 1915.

FIG. 1.

FIG. 2

FIG. 3.

FIG. 4.

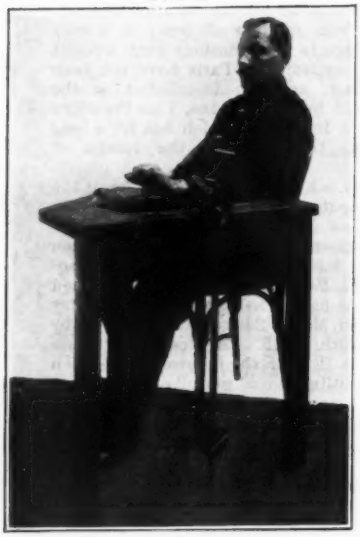

FIG. 5.

FIG. 6.

FIG. 7.

FIG. 8.

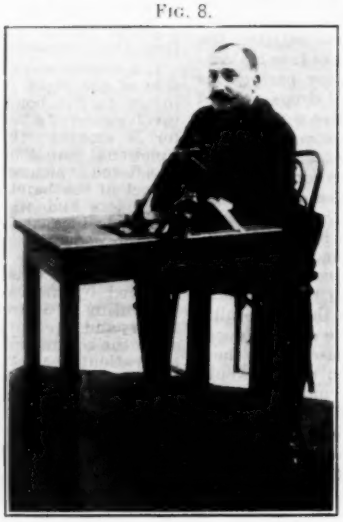

FIG. 9.

FIG. 10

FIG. 11.

FIG. 12.

DESCRIPTION OF FIGURES ILLUSTRATING THE ZANDER APPARATUS.

FIG. 1. *Circumduction of the arm.*—A sideways position is assumed against the stirrup designed to receive the armpit, and the seat is raised or lowered until this fork touches the bend of the armpit. The movable handle is grasped, the arm well extended, and the sector is turned. The axis around which the movement is made is adjustable so that it may assume various angles of inclination.

FIG. 2. *Rotation of the arm* (active and passive).—A seat is taken in front of the apparatus and the forearm is placed on the wooden lever, the hand grasps the handle, and the elbow is held within the iron rim attached to the fixed end of the lever, care being taken to hold the arm vertical. In order to prevent associated movements of the trunk, the other arm is firmly fixed by means of the leather strap fixed to the upright. The scale plate is loaded with one or more flat weights, and the forearm yields slowly to traction.

FIG. 3. *Lowering of the arms with flexion of the forearm.*—The exercise consists in lowering the arms extended vertically above the head while bending the forearm on the arm. The patient places himself under the hanging handles, which must be arranged at the height of the shoulder. He has to grasp them and to yield slowly to the action of the weights which cause the arms to be extended vertically. Then he lowers the arms until the hands come to the level of the shoulders and yields afresh to the traction of the weights.

FIG. 4. *Flexion and extension of the wrist.*—The mechanism of these simple resisted movements is sufficiently explained by reference to the illustration.

FIG. 5. *Flexion and extension of the forearm.*—A position is taken at the side of the apparatus and the arm which is to be exercised is attached to the leather straps of the supports. The elbow should be placed in the axis of the lever; by means of planks placed beneath the feet, persons whose height is below the average may bring their elbow at the height desired. The hand grasps the handle, the palm turned forward. In the movement of flexion the handle should be below and the counterpoise on the half of the double lever which is situated in front of the patient. In the movement of extension the handle should be situated above and the counterpoise on the half of the double lever which is behind the patient. In order to pass from flexion to extension it suffices to displace the weight from one half to the other of the double lever. When it is proposed to exercise the left arm after the right arm and vice versa the lever with the handle must be shifted on its shaft by moving the washer which is supplied with clutches; this action withdraws the eye-bolts retaining the lever, which then turns by 180° around its axis.

FIG. 6. *Pronation and supination of the forearm* (active and semi-active movements).—The handle of the apparatus is brought into a horizontal position when pronation is proposed, and into a vertical position when supination is required. The double lever should be in either case in a vertical position and the counterpoise below. At the commencement of the movement of pronation the back of the hand is turned down, the thumb behind. At the beginning of the movement of supination the back of the hand is turned forward, the thumb below. The arm should be held firmly extended. When the active movement is required one weight is placed at the centre of the lever and the other at a distance from the centre which corresponds to the resistance in the patient which it is desired to overcome. The movement may have another object than that of exercising the rotatory muscles of the arm. It may be designed to produce a relaxation by a stretching of the rotatory muscles, of the tendons, and of the articular capsules of the arm. In this case one weight is placed at each end of the lever, and there is no occasion to pay attention to the position of the handle and the lever.

FIG. 7. *Circumduction of the hand.*—The forearm rests on the platform to which it is firmly strapped. The hand grasps the handle attached to a rotating disc at an adjustable distance from the centre. A handle on the back of the disc makes passive movement possible when desired.

FIG. 8. *Flexion and extension of the fingers.*—The mechanism of these simple resisted movements is sufficiently explained by reference to the illustration.

FIG. 9. *Extension of the thigh and the leg.*—The exercise consists in producing simultaneous extension of the articulation of the thigh and of the leg. A position is taken in front of the apparatus, the hands on the wooden uprights, a foot is placed on the iron pedal which is retained near the level of the floor by a catch. Placing the foot on this pedal causes it to become disconnected, and thereupon an upward movement is produced which is slowly yielded to. When it is desired to terminate the exercise the catch on the arm of the lever must be applied.

FIG. 10. *Flexion of the thigh and the leg.*—The exercise consists in performing simultaneous flexion at the hip and knee-joints. A position is taken in front of the machine, the two feet at the same level. The foot which is to be exercised is then introduced under the stirrup. The patient supports himself on the lateral uprights and raises the foot against the adjustable resistance.

FIG. 11. *Flexion and extension of the knee.*—The exercise consists in bending the leg at the knee-joint. The patient takes a seat in the armchair and slides down until the articulation of the knee is at the level of the axis of rotation of the apparatus. *Flexion.* The leg which is to be exercised is placed on the padded hook of the beam; the hook ought to engage a little above the heel. The thigh is fixed with the leather straps of the seat. *Extension.* The leg which is to be exercised is placed behind the beam; the hook should engage just above the ankle-joint. The little weight which is placed on the single lever is intended to counterbalance the weight of the leg in the movement of flexion. It ought to be fixed, to fulfil this condition, at the extremity of the lever seen at the level of the patient's shoulder. In the movement of extension it ought to be fixed lower down, nearer the axis of rotation. Cases of ankylosis of the knee may demand forced flexion or extension. In order to obtain forced flexion, the apparatus is put into a position of extension. In order to obtain forced extension, the apparatus is put in a position of flexion. Care must then be taken to shift the weight gradually and without jerks.

FIG. 12. *Circumduction of the foot.*—The foot is placed on the iron sole or treadle and it is fastened firmly with the binding strap. The circumduction is performed by a succession of movements of flexion and extension of the foot. The amplitude of the movement may be determined at will by fixing the rod at a greater or lesser distance from the axis of the fly-wheel on the iron sector. The crank handle placed on the fly-wheel permits of the movement being performed passively.

a stay of about eight months in bed. Treatment was begun on Nov. 9th. The condition was stated to be one of functional weakness, with three centimetres of shortening. The knee was ankylosed at an angle of 155° from prolonged immobilisation; abundant callus was present, the axis of the femur was slightly bent inward, limiting the movement of the knee-joint. Some œdema and venous obstruction were still present. The left thigh measured 6 cm. more than the right, and the left leg 4 cm. in excess of the right leg. The treatment applied was *eau courante* at 36° C. for 20 minutes, with massage and manual mobilisation, followed by mechanical movements. In three weeks œdema was reduced by one-half, pain was relieved, and flexion increased to 145°. After three weeks more the œdema was disappearing and the man walking more easily, with improving flexion of the knee. The number of treatments was 33, and the percentage of incapacity had been reduced from 70 to 50.

Supervision of results.—Dr. Camus has occasion to repeat a warning already given in regard to the necessity of supervising the men when the limit of beneficial result has been reached and of seeing that they then undergo a further special military training. At a certain stage, too, military exercises form an excellent supplement to the mechanical treatment, and a group of invalided non-commissioned officers have been told off for this work and their presence exerts a helpful influence on the men's recovery. The work of the medical experts in estimating with rapidity and accuracy the invalidity before and after treatment is work for which the highest skill is required and the faculty only comes with practice. The same experts have been responsible for the scientific work of examining candidates for aviation by the special methods mentioned recently by the Paris correspondent of THE LANCET.

Mechanical treatment.—The advantages of treatment by apparatus of the Zander type have already been discussed. The prescription is definitely adapted to the needs of each case and states the number of the apparatus to be employed as well as the duration and frequency of the treatment, the intention being to give the maximum of movement compatible with a minimum of fatigue. It has been found that movements made with very heavy weights by no means give the best results, and that the order in which the apparatus is employed is a matter of importance. Fatigue lessens the good results, and the application should be continued only as far as the point at which movements become painful. The apparatus, as installed in many institutions on the continent, is largely arranged for passive movements, and hence requires driving force and machinery of a complicated nature. A great simplification for the purpose in hand has been introduced by the selection of 12 relatively simple pieces of apparatus for active movements alone. We reproduce illustrations of these 12 machines which have been found to provide all the essential movements, and two sets of which are stated to suffice for quite a large institution. The total cost[2] of these 12 apparatus amounts to 3900 francs, or roughly £160, and their total weight to 1391 kilos. Such a model installation might very well be provided in an institution for physical treatment such as the Alexandra Institute in which the Committee of the Balneological Section of the Royal Society of Medicine are interested, where the effect of mechanical treatment could then be studied along with hydrotherapeutic and electrical methods.

THE SERVICES.

IT is officially announced that Surgeon-General W. Babtie, V.C., has been appointed to assist Surgeon-General Sir A. Keogh, Director-General of the Army Medical Services, especially in the work of supervision of invaliding and questions connected with the physical fitness of the troops at home. Surgeon-General Babtie has been Assistant Director-General of the Army Medical Service, Administrative Medical Officer of the Woolwich District, and Inspector of Medical Services.

ROYAL NAVY MEDICAL SERVICE.

The undermentioned has been entered as a Surgeon for temporary service in His Majesty's Fleet:—G. S. Mitchell.

ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel J. W. Barrett, late Australian Army Medical Corps, to be temporary Lieutenant-Colonel.

Major (temporary Lieutenant-Colonel) C. H. Straton to retain his temporary rank whilst in command of a Field Ambulance.

The undermentioned Majors to be temporary Lieutenant-Colonels while commanding Field Ambulances:—E. B. Knox, H. B. Connell, and H. Stewart.

The undermentioned Majors to be temporary Lieutenant-Colonels whilst in command of a Casualty Clearing Station: J. H. Brunskill, A. R. C. Parsons, R. H. L. Cordner, and H. T. Wilson.

Temporary Captain (temporary Major) A. N. Minns relinquishes the temporary rank of Major on ceasing to command a Field Ambulance.

C. N. Binney to be temporary Captain.

J. Jenkins to be temporary Major whilst employed at the Hammersmith Military Hospital. Major C. V. N. Lyne, retired pay, Indian Army, to be temporary Major.

Temporary Lieutenants to be temporary Captains: J. Boyd, F. Harris, R. C. Begg, D. Evans, J. R. Forde, H. T. Lukyn-Williams, S. B. Faulkner, H. W. Wilson, P. Ashe, C. F. Anthonisz, H. W. Fox, F. Graveley, W. H. Anderson, J. E. O'Loghlan, G. J. Bowen, C. Hunter, D. S. Brough, A. Fraser, G. D. Cairns, A. P. Saint, B. B. Westlake, G. M. Jones, S. K. Vines, A. T. Cunningham, S. A. Montgomery, E. S. Hall, A. F. Readdie, C. Sullivan, A. C. Turner, R. H. Tribe, R. M. Johnston, E. C. Dutton, W. H. Stott, A. J. W. Compton, F. C. Macaulay, and E. W. Smerdon.

The undermentioned to be temporary Lieutenants: J. M. Stalker, D. Crellin, P. Black, L. F. Hirst, G. W. Young, A. Sandison, R. C. Hewitt, J. C. O'Farrell, Lieutenant T. P. Buist (from Unattached List, Territorial Force), W. E. Taylor, G. M. De Vine, H. Hannigan, J. W. Wayte, C. H. F. Bailey, and A. H. Corley.

The undermentioned temporary honorary Lieutenants to be temporary Lieutenants: E. G. Dingley and P. H. Wells.

Temporary Lieutenant F. C. Barlow relinquishes his commission.

Temporary Honorary Lieutenant W. Burt relinquishes his commission on ceasing to be employed with the British Red Cross Hospital, Netley.

E. W. Twining is granted the temporary honorary rank of Lieutenant whilst serving with the British Red Cross Hospital, Netley.

Canadian Army Medical Corps: A. R. Robertson, A. H. Rolph, G. M. Ross, and H. C. Hodgson to be temporary Captains. Lieutenant E. Reavley to be temporary Lieutenant.

South African Medical Corps: H. R. Mullins to be temporary Captain.

SPECIAL RESERVE OF OFFICERS.

Royal Army Medical Corps.

The undermentioned Lieutenants to be Captains: H. T. Chatfield and A. L. C. Mackenzie.

Captain P. B. Roth relinquishes his commission on account of ill-health.

Lieutenant (on probation) T. C. Studley relinquishes his commission.

Lieutenant (on probation) F. H. Goss is confirmed in his rank.

TERRITORIAL FORCE.

Royal Army Medical Corps.

London Field Ambulance: The appointment of M. J. Hackett as Lieutenant is cancelled.

Wessex Field Ambulance: Captain F. L. Dickson relinquishes his commission on account of ill health.

London General Hospital: The undermentioned Lieutenants to be Captains:—D. N. Hardcastle, A. W. Bowie, L. A. Celestin, W. L. Holyoak, P. G. Doyne, W. J. T. Kimber, H. M. Harwood, and H. A. Philpot.

Northern General Hospital: Captain T. M. Allison to be Major. Captain J. W. Heslop, from the Territorial Force Reserve, to be Captain. Major E. M. Sympson to be Lieutenant-Colonel.

London Sanitary Company: Lieutenant T. J. Murray to be Captain.

Welsh Border Mounted Brigade Field Ambulance: James Derham-Reid to be Lieutenant.

South Midland Field Ambulance: Captain H. N. Burroughes, from Attached to Units other than Medical Units, to be Captain.

East Lancashire Casualty Clearing Station: Lieutenant (temporary Captain) T. B. Wolstenholme to be Captain.

Wessex Casualty Clearing Station: Lieutenant J. Fenton, from Attached to Units other than Medical Units, to be Lieutenant.

Lowland Field Ambulance: Lieutenants to be Captains: H. T. Findlay and N. Scott.

North Midland Field Ambulance: Captain (temporary Major) H. A. Howes, The Lincolnshire Regiment, to be Major (temporary).

Western General Hospital: Lieutenants to be Captains: R. T. Jones and C. C. Boyle.

East Lancashire Field Ambulance: Major T. Holt to be temporary Lieutenant-Colonel.

[2] The cost is quoted by J. Borderel, Constructeur, 46, Rue St. Ferdinand, Paris.

Attached to Units other than Medical Units.—To be Captains: P. G. Williamson (late Captain, The Prince of Wales's Own (West Yorkshire Regiment)) and Lieutenants C. C. Ling, J. de V. Mather, and F. A. Pring.

DEATHS IN THE SERVICES.

Colonel Richard Patrick Ferguson, late R.A.M.C., recently at Southsea, at the age of 76. He joined the Medical Service in 1862, and served with the Bhootan Expedition of 1864–5 (medal with clasp) and in the Afghan War of 1878–9, and the Egyptian Expedition of 1882 (medals and Egyptian Expedition bronze star). He retired in 1899.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN the 96 English and Welsh towns with populations exceeding 50,000 persons at the last Census, 8263 births and 6215 deaths were registered during the week ended Saturday, March 18th. The annual rate of mortality in these towns, which had been 15·7, 17·8, and 17·2 per 1000 in the three preceding weeks, rose in the week under notice to 17·9 per 1000 of their aggregate population, estimated at 18,135,180 persons at the middle of the year 1914. During the first 11 weeks of the current quarter the mean annual death-rate in these towns averaged 15·5, or 0·5 per 1000 above that recorded in London. The annual death-rate last week ranged from 6·2 in Southend-on-Sea, 6·3 in Ilford, 7·5 in Eastbourne, 8·1 in Edmonton, and 8·4 in Gillingham, to 24·1 in Dudley, 24·5 in Wolverhampton, 24·7 in Southport, 26·1 in Liverpool, and 31·3 in Bootle.

The 6215 deaths from all causes were 244 in excess of the number in the previous week, and included 378 which were referred to the principal epidemic diseases, against 409 and 345 in the two preceding weeks. Of these 378 deaths, 127 resulted from measles, 93 from whooping-cough, 68 from infantile diarrhœal diseases, 61 from diphtheria, 19 from scarlet fever, and 10 from enteric fever, but not one from small-pox. The annual death-rate from these diseases was equal to 1·1, against 1·0 per 1000 in the previous week. The deaths attributed to measles, which had increased from 62 to 124 in the six preceding weeks, further rose to 127, and caused the highest annual death-rates of 2·1 in Swansea, 2·5 in Stockport, 3·4 in Leicester, 4·4 in Southport, and 5·0 in Rochdale. The deaths referred to whooping-cough, which had declined from 133 to 85 in the four preceding weeks, rose to 93, and included 34 in London, 7 each in Birmingham and Liverpool, 6 in Sheffield, and 4 in Manchester. The fatal cases of infantile diarrhœa and enteritis, which had been 57, 65, and 60 in the three preceding weeks, rose to 68; 20 deaths were registered in London, 4 in Manchester, and 3 each in Birmingham, Salford, and Leeds. The deaths attributed to diphtheria, which had been 56, 82, and 54 in the three preceding weeks, rose to 61, and included 13 in London, 5 in Birmingham, 4 in St. Helens, and 3 each in East Ham, Portsmouth, Manchester, and Stoke-on-Trent. The deaths referred to scarlet fever, which had been 14, 17, and 13 in the three preceding weeks, rose to 19; 5 deaths were recorded in London, 3 in Middlesbrough, and 2 in Liverpool. The 10 fatal cases of enteric fever, of which 3 occurred in London, were 1 in excess of the average in the earlier weeks of the quarter.

The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had declined from 2257 to 1908 in the eight preceding weeks, further fell to 1839 on Saturday last; 193 new cases were admitted during the week, against 194, 234, and 216 in the three preceding weeks. These hospitals also contained on Saturday last 1478 cases of diphtheria, 209 of whooping-cough, 118 of measles, and 54 of enteric fever, but not one of small-pox. The 1604 deaths from all causes in London were 137 in excess of the number in the previous week, and corresponded to an annual death-rate of 18·5 per 1000. The deaths referred to diseases of the respiratory system, which had been 284, 373, and 344 in the three preceding weeks, rose to 405 in the week under notice, but were 73 below the number registered in the corresponding week of last year.

Of the 6215 deaths from all causes in the 96 towns, 171 resulted from violence and 454 were the subject of coroners' inquests, while 1878 occurred in public institutions. The causes of 68, or 1·1 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest. All the causes of death were duly certified in Sheffield, Leeds, Bristol, West Ham, Bradford, Hull, and in 73 other smaller towns. Of the 68 uncertified causes, 21 were registered in Birmingham, 19 in Liverpool, 5 in Manchester, and 3 each in St. Helens and Rochdale.

HEALTH OF SCOTCH TOWNS.

In the 16 largest Scotch towns with an aggregate population estimated at 2,364,500 persons at the middle of this year, 1139 births and 938 deaths were registered during the week ended Saturday, March 18th. The annual rate of mortality in these towns, which had increased from 15·5 to 18·7 per 1000 in the four preceding weeks, further rose to 20·7 per 1000 in the week under notice. During the first 11 weeks of the current quarter the mean annual death-rate in these towns averaged 16·1, against a corresponding rate of 15·5 per 1000 in the large English towns. The death-rate last week ranged from 6·2 in Motherwell, 10·2 in Kirkcaldy, and 12·6 in Clydebank, to 25·5 in Greenock, 31·9 in Paisley, and 32·7 in Ayr.

The 938 deaths from all causes were 92 in excess of the number in the previous week, and included 89 which were referred to the principal epidemic diseases, against 56 and 64 in the two preceding weeks. Of these 89 deaths, 42 resulted from measles, 16 from diphtheria, 12 from scarlet fever, 11 from infantile diarrhœal diseases, and 8 from whooping-cough, but not one from enteric fever or from small-pox. The annual death-rate from these diseases was equal to 2·0, or 0·9 per 1000 above that recorded in the large English towns. The deaths attributed to measles, which had been 28, 23, and 31 in the three preceding weeks, rose to 42, and included 21 in Glasgow, 6 in Kilmarnock, and 4 each in Edinburgh and Greenock. The deaths referred to diphtheria, which had been 8, 10, and 7 in the three preceding weeks, rose to 16, of which 6 were registered in Glasgow, 5 in Edinburgh, and 3 in Paisley. The fatal cases of scarlet fever, which had been 15, 9, and 6 in the three preceding weeks, rose to 12, and included 8 in Glasgow and 2 in Paisley. The deaths of infants (under 2 years) from diarrhœa and enteritis, which had been 8 in each of the three preceding weeks, rose to 11; 6 deaths occurred in Glasgow and 2 in Paisley. The 8 fatal cases of whooping-cough, of which 3 were recorded in Glasgow, were 4 in excess of the average in the earlier weeks of the quarter.

The deaths referred to diseases of the respiratory system, which had increased from 88 to 169 in the four preceding weeks, further rose to 195 in the week under notice, and were 7 above the number registered in the corresponding week of last year. The deaths from violence numbered 26, against 21 and 29 in the two preceding weeks.

HEALTH OF IRISH TOWNS.

In the 19 town districts of Ireland with populations exceeding 10,000 persons at the last Census, 498 births and 470 deaths were registered during the week ended Saturday, March 18th. The annual rate of mortality in these towns, which had been 18·0, 21·5, and 24·5 per 1000 in the three preceding weeks, fell in the week under notice to 21·3 per 1000 of their aggregate population, estimated at 1,148,468 persons at the middle of last year. During the first 11 weeks of the current quarter the mean annual death-rate in these towns averaged 19·7, against corresponding rates of 15·5 and 16·1 per 1000 in the English and Scotch towns respectively. The death-rate during the week was equal to 23·3 in Dublin (against 18·5 in London and 21·4 in Glasgow), 20·8 in Belfast, 25·8 in Cork, 19·0 in Londonderry, 23·0 in Limerick, and 20·9 in Waterford, while in the 13 smaller towns the mean rate was 15·4 per 1000.

The 470 deaths from all causes were 70 fewer than the number in the previous week, and included 38 which were referred to the principal epidemic diseases, against numbers increasing from 29 to 51 in the three preceding weeks. Of these 38 deaths, 16 resulted from measles, 10 from infantile diarrhœal diseases, 8 from whooping-cough, 2 from scarlet fever, and 1 each from enteric fever and diphtheria, but not one from small-pox. The annual death-rate from these diseases was equal to 1·7, against corresponding rates of 1·1 and 2·0 per 1000 in the English and Scotch towns respectively. The deaths attributed to measles, which had been 9, 12, and 18 in the three preceding weeks, fell to 16, and included 11 in Belfast, and 2 each in Dublin and Newry. The deaths of infants (under 2 years) from diarrhœa and enteritis, which had increased from 5 to 13 in the four preceding weeks, fell to 10, of which 4 occurred in Dublin and 2 in Belfast. The fatal cases of whooping-cough, which had been 7, 11, and 10 in the three preceding weeks, fell to 8, and comprised 4 in Belfast, 3 in Dublin, and 1 in Limerick. The deaths from scarlet fever were registered in Belfast and Londonderry, that from enteric fever in Dublin, and that from diphtheria in Belfast.

The deaths referred to diseases of the respiratory system, which had increased from 68 to 124 in the four preceding weeks, fell to 117 in the week under notice, and were 34 below the number registered in the corresponding week of last year. Of the 470 deaths from all causes, 152, or 32 per cent., occurred in public institutions, and 4 resulted from violence. The causes of 17, or 3·6 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest, and included 5 in Dublin, 4 in Belfast, and 3 in Limerick; in the large English towns the proportion of uncertified causes did not exceed 1·1 per cent.

A MONTHLY RECORD OF ATMOSPHERIC POLLUTION.

COMMITTEE FOR THE INVESTIGATION OF ATMOSPHERIC POLLUTION:

Summary of Reports for Month ending Sept. 30th, 1915.

Place.	Rainfall in millimetres.	Metric tons of deposit per square kilometre during month.								
		Insoluble matter.			Soluble matter.		Total solids.	Included in soluble matter.		
		Tar.	Carbonaceous other than tar.	Ash.	Loss on ignition.	Ash.		Sulphate as (SO_4).	Chlorine (Cl).	Ammonia (NH_3).
ENGLAND—										
Birmingham, Central [1]	—	—	—	—	—	—	—	—	—	—
,, Aston	15	0·04	1·49	6·67	0·70	2·80	11·70	1·70	0·20	0·03
,, S.W.	17	0·03	1·07	3·50	0·60	2·10	7·30	1·20	0·10	0·04
Bolton [2]	—	—	—	—	—	—	—	—	—	—
Exeter	27	0·01	1·09	2·40	0·45	2·01	5·96	1·05	0·13	0·02
Kingston-upon-Hull	36	0·12	3·05	3·49	1·83	3·43	11·92	2·21	0·31	0·03
Leicester	29	0·02	3·01	4·51	2·07	2·53	12·10	1·23	0·23	0·07
Liverpool	46	0·10	3·67	2·86	1·39	3·16	11·18	1·95	0·36	0·14
London—										
Meteorological Office	48	0·04	0·01	2·24	1·92	3·45	7·60	1·44	0·47	Trace.
Embankment Gardens	40	0·39	3·76	5·81	7·98	17·75	35·69	6·98	1·63	0·05
Finsbury Park	40	0·08	0·71	2·57	0·56	2·01	5·93	1·32	0·26	0·04
Ravenscourt Park	56	0·04	1·02	3·52	0·67	2·90	8·15	1·89	0·28	0·07
Southwark Park	51	0·26	2·34	8·12	1·41	4·55	16·68	2·67	0·34	0·08
Wandsworth Common	40	0·05	1·26	4·11	0·64	4·03	10·09	2·15	0·29	0·06
Victoria Park	42	0·04	0·84	2·31	1·90	5·26	10·35	3·14	0·29	0·10
Golden Lane	51	0·05	2·90	4·70	1·22	3·07	11·94	2·02	0·44	0·13
Manchester—										
Ancoats Hospital	32	0·11	3·36	11·14	1·41	3·37	19·39	1·63	0·40	0·07
Bowdon	22	0·01	0·25	0·90	0·38	1·55	3·09	1·13	0·21	0·06
Cheadle [3]	—	—	—	—	—	—	—	—	—	—
Davyhulme	27	0·05	1·09	2·00	1·15	3·67	7·87	1·12	0·38	0·11
Fallowfield	28	0·05	0·65	1·48	0·19	2·58	4·95	1·55	0·22	0·04
Moss-side	31	0·11	0·62	1·94	0·39	2·99	6·05	1·30	0·40	0·06
Philips Park	36	0·10	2·45	6·15	1·24	3·73	13·67	1·75	0·70	0·05
Queen's Park	40	0·04	2·36	7·29	2·32	4·76	16·77	2·64	0·63	0·04
School of Technology	22	0·09	2·83	9·41	1·42	4·59	18·34	1·73	0·39	0·07
Whitefield	47	0·06	1·37	4·35	1·52	5·01	12·31	2·59	0·44	0·04
Newcastle-on-Tyne [4]	—	—	—	—	—	—	—	—	—	—
Oldham	17	0·10	3·98	11·37	0·90	2·36	18·71	1·32	0·35	0·08
York...	16	0·07	1·08	2·81	0·53	0·94	5·43	0·47	0·07	0·03
SCOTLAND—										
Coatbridge	35	0·06	1·53	3·65	1·30	2·16	8·70	1·73	0·10	0·11
Greenock	40	0·04	4·38	6·28	2·61	4·62	17·93	2·71	0·92	0·16
Leith	43	0·04	0·49	1·42	0·69	1·56	4·20	1·04	0·10	0·17

Corrections.—In previous tables the figures respectively for Leicester for the month ending June 30th, 1915, and for Fallowfield (Manchester) for the month ending August 31st, 1915, should be read as under:—

Leicester	79	0·03	1·55	3·04	2·55	3·49	10·66	2·15	0·25	0·16
Manchester—										
Fallowfield	74	0·06	1·02	2·41	0·65	4·22	8·36	2·59	0·29	0·06

[1] Gauge tampered with; results unreliable. [2] Record lost during transit to laboratory. [3] No returns. [4] No returns; gauge removed temporarily.

"Tar" includes all matter insoluble in water but soluble in CS_2. "Carbonaceous" includes all combustible matter insoluble in water and in CS_2. "Insoluble ash" includes all earthy matter, fuel, ash, &c. One metric ton per sq. kilometre is equivalent to: (*a*) Approx. 91b. per acre; (*b*) 2·56 English tons per sq. mile; (*c*) one gramme per sq. metre; (*d*) 1/1000 millimetre of rainfall.

The public health authorities concerned in the supervision of these examinations were as follows: Dr. J. Robertson, Medical Officer of Health of Birmingham; Dr. J. E. Gould, Medical Officer of Health of Bolton; Mr. H. Lloyd Parry, Town Clerk, Exeter; Mr. A. R. Tankard, Public Analyst, Kingston-upon-Hull; C. K. Millard, D.Sc., Leicester; Dr. E. W. Hope, Medical Officer of Health of Liverpool; The Director of THE LANCET Laboratory, Meteorological Office, London; Mr. J. Ollis, Chief Officer, Public Control Department, London County Council, London; Dr. W. J. Howarth, Medical Officer of Health of London; Mr. W. Osborne Thorpe, Engineer, Urban District Council, Malvern; Mr. J. Warrington, Secretary, Air Pollution Advisory Board, Manchester; Dr. H. Kerr, Medical Officer of Health of Newcastle-on-Tyne; Dr. J. B. Wilkinson, Medical Officer of Health of Oldham; Professor W. P. Wynne, The University, Sheffield; Dr. E. M. Smith, Medical Officer of Health of York; Mr. A. G. Dutch, Sanitary Inspector, Coatbridge; Mr. J. Devine, Sanitary Inspector, Greenock; Mr. Thomas Bishop, Sanitary Inspector, Leith; and Mr. W. W. Kelso, Sanitary Inspector, Paisley.

The analytical work involved in these returns was undertaken respectively by J. F. Liverseege, F.I.C., Birmingham; Harry Hurst, B.Sc., F.I.C., Bolton; F. Southerden, B.Sc., F.I.C., Exeter; A. R. Tankard, F.I.C., Kingston-upon-Hull; S. F. Burford, Leicester; W. H. Roberts, M.Sc., F.I.C., Liverpool; S. A. Vasey, F.I.C., Director, THE LANCET Laboratory (London Meteorological Office collections); J. H. Coste, F.I.C. (Embankment Gardens, Finsbury Park, Ravenscourt Park, Southwark Park, Wandsworth Common, Victoria Park collections), London; F. L. Teed, D.Sc., Golden-lane, London, E.C.; C. C. Duncan, F.I.C., Malvern; E. Knecht, Ph.D., M.Sc., Manchester collections; J. T. Dunn, D.Sc., Newcastle-on-Tyne; Samuel Urmson, Oldham; Professor W. P. Wynne, Sheffield collections; S. H. Davies, M.Sc., York; Messrs. R. R. Tatlock and Thomson, Coatbridge; J. W. Biggart, F.I.C., Greenock; A. Scott Dodd, B.Sc., F.I.C., Leith and Paisley.

THE LATE DR. JOSEPH BARNICOT.—The death is announced of Dr. Joseph Barnicot, of Hitchin, Hertfordshire, from typhoid fever on March 10th. Dr. Barnicot was the son of the late Mr. John Barnicot, of Huddersfield, and was born in that town in 1875. He was educated at Marlborough, Pembroke College, Cambridge, and St. Thomas's Hospital, while he also studied at the Rotunda Hospital, Dublin, but after obtaining his B.A. degree he spent some time in travelling abroad. In 1902 he took the M.B., B.C. degree at the University of Cambridge, and also the diplomas of the English Conjoint Board, while directly after qualifying he was appointed assistant house surgeon at the Huddersfield Infirmary, and subsequently held the senior post. In 1905 he took the M.D. degree at Cambridge, reading for the purpose an excellent thesis on the Iodine Reaction in the Leucocytes, which work was carried out at Cambridge and in the pathological department at St. Thomas's Hospital. In 1906 he set up in practice at Hitchin. There he had built up an excellent practice at the time of his tragic death. He was greatly respected in the town, where he devoted all his time and thought to his patients, rich and poor alike. Dr. Barnicot was a man of marked ability, but of a retiring disposition, and for this reason had not a very large circle of intimate friends, but those who were fortunate enough to be included realise well the loss they have sustained. He was twice married, and had by his first wife one son, and by his second wife two daughters.

DONATIONS AND BEQUESTS.—The late Miss Elizabeth Weir, of Edinburgh, among other bequests left by will £5000 to the Royal Infirmary, Edinburgh; £1000 each to the Royal Hospital for Incurables and the Royal Victoria Hospital for Consumption, Edinburgh; and £500 to the Royal Edinburgh Hospital for Consumption.—As a memorial to his daughter, the late Mrs. Ashley, Sir Ernest Cassel has endowed another free bed in the Royal Sea Bathing Hospital by a gift of £1000.

Correspondence.

"Audi alteram partem."

CERTIFICATION OF THE CAUSE OF DEATH.

To the Editor of THE LANCET.

SIR,—In THE LANCET of March 18th reference is made to the views of a coroner's clerk who said that a doctor should give a certificate of the cause of death although the doctor had not seen the deceased for six months before death. Those interested in this question should read the recommendations of the Select Committee on Death Certification of the House of Commons (1893). This Select Committee reported as follows:—

> Your Committee consider that attendance "during last illness" should be defined as meaning personal attendance by the person certifying upon at least two occasions, one of which should be within eight days of death.

The Committee also recommended that before giving a certificate the doctor should be required personally to inspect the dead body, and so verify not only the cause of death, but also the fact of death.

Some practitioners carry out these recommendations, charging a fee for the inspection and a fee for the certificate. I would suggest that practitioners obtain this Parliamentary Report with the Minutes of Evidence from Eyre and Spottiswoode, Harding-street, London, E.C., and that we all put these recommendations of the Select Committee into practical operation.

The Minutes contain my evidence relating to the above subject, and also to the custom in foreign countries relating to registration of stillborn children. The evidence led to the passing of the Notification of Births Act, 1907 and 1915. I may add that these Acts contain a very great flaw in that they provide that stillbirths under seven months shall not be notified—as if anyone can tell whether a conception is 20 or 30 weeks intra-uterine life!

Would it not give good results if the Registrar-Generals of England, Scotland, and Ireland, in combination with the three Local Government Boards, adopted standing regulations bearing upon certification of deaths? Why "wait and see"?

I am, Sir, yours faithfully,

Liverpool, March 21st, 1916. ROBERT R. RENTOUL.

*** The coroner's clerk, as we have already said, was mistaken wholly.—ED. L.

ALBUMINURIC RETINITIS.

To the Editor of THE LANCET.

SIR,—I warmly welcome Mr. R. Foster Moore's reply in your issue of March 4th to my note on this subject, as he accepts the differentiation of the two forms of albuminuric retinitis which I have described and called the degenerative and the exsudative form. He not only accepts it, but states that he believes it to be of great importance. I wish he had gone a little further and said that it was a distinction which was fundamental. As regards the exsudative form and its resemblance to that sometimes seen in cerebral tumour, I did not intend to imply, nor do I think, that it is similar to the optic neuritis commonly seen with cerebral tumour, for as a rule the exsudation forms more or less extensive areas with soft edges and of a yellowish-white colour, widely and irregularly dispersed over the fundus; but this may occur sometimes in cerebral tumour, and then the resemblance is so close that I have on several occasions seen the diagnosis confused. As regards the degenerative form, Mr. Moore states that though highly characteristic it is not pathognomonic. A universal statement can hardly ever be made about anything in medicine, but I can only say that it is pathognomonic so far as my experience goes, and that I have never seen it under any other condition than granular kidney. If not absolutely pathognomonic it may safely be regarded as practically so. There are cases met with now and then in which tiny patches of exsudation show a very bright glistening appearance, and these, of course, may disappear if the patient gets well; but the typical glistening white patches I have not myself seen to vanish, even when they have been quite tiny—I presume because the disease upon which they depend is progressive and not curable. Mr. Moore says I did not "define" granular kidney. I hardly thought it necessary. My object was to make distinctions, not definitions, and to show how necessary it was not to use so indefinite a term as "chronic nephritis," which includes two conditions at least which should be sharply distinguished—viz., the chronic or long-standing parenchymatous nephritis giving rise to the large white kidney, and the chronic degenerative disease of very long duration and of slow progress called granular kidney. The distinction is essential, because the two forms of albuminuric retinitis stand in a different relation to these two forms of chronic nephritis.

My own conclusions are based upon long clinical observation and I state them as such. I cannot doubt that the experience of others who approach the subject with an open mind will tally with my own.

I am, Sir, yours faithfully,

Wimpole-street, W., March 16th, 1916. SAMUEL WEST.

THE SIGNIFICANCE OF CERVICAL CAPILLARY MARKINGS.

To the Editor of THE LANCET.

SIR,—In reference to cutaneous telangiectases about the upper dorsal vertebral spines, a subject introduced by Dr. Crawshaw Holt in your issue of March 4th under the above heading, I should like to express my agreement with Dr. Parkes Weber's remarks in your issue of March 11th as to their common occurrence in healthy people; he places the incidence among healthy young adults at 50 per cent. Some time ago I examined 164 school children in a healthy London suburb in regard to the occurrence of these dilated venules with the following result. Of the 164 children 21 were aged 8 and the remainder 12 or 13 years; the incidence of spinal venules was found to be identical in the two age-groups.

They were present altogther in 71, or 43·3 per cent.; in 16 cases they were noted as strongly marked, in 30 as slight, and in the remainder as merely "present." They extended in most cases round the spines of the seventh cervical and first or second dorsal vertebræ, but in a good number reached as low as the third to fifth spine. In 4 cases similar telangiectases occurred in abundance over the back, shoulders, arms, and chest, and in 3 over the cheeks. The chest veins were unduly visible in 20 cases (28 per cent.). In 5 cases (7 per cent.) of the 71 there was found right-sided paravertebral dullness suggestive of glandular enlargement (bifurcation glands). The children were for the most part well nourished, 74 per cent. in this group being classed as "good." Among the 93 cases

(56·7 per cent.) where spinal venules were absent 71 per cent. were noted as of "good" nutrition. Only 9 cases (9·6 per cent.) showed dilated chest veins, and in 3 (3 per cent.) paravertebral dullness pointed to enlarged glands.

The higher incidence of dilated chest veins and paravertebral dullness in the first group suggests a connexion between the spinal telangiectases and enlargement of intrathoracic glands, and hence tuberculosis. In an investigation recently made by myself into the incidence and characteristics of manifest tuberculosis among children from tuberculous households it was found that 41·7 per cent. (among 24 children) showed these spinal venules, while they were present in only 23 per cent. of children (22 in number) drawn from healthy households in the same neighbourhood. Among the whole the incidence of venules where manifest signs of disease (mostly glandular) were present was just twice that among those with apparently normal chests. Here, again, there is evidence to suggest that the dilated spinal venules are, like dilated veins over the chest, in many cases at least, of pressure origin, and owe their presence, as was suggested by W. Overend as long ago as 1901, to pressure on right or left superior intercostal vein, or on the vena azygos major into which the former opens. Their special association with enlargement of tracheo-bronchial glands might thus be expected; but, curiously enough, where signs of this occurred among the subjects of my investigation mentioned above, the spinal venules were more often absent than present (in 8 among 10). In some cases, and notably where, as in four cases referred to, similar telangiectases are also present over other parts of the body, they are very probably of nævoid nature and allied to the venules so often present in the red parts of the cheek.

As to the value of the spinal venules in diagnosis, this may be readily gauged from their presence in over 40 per cent. of healthy young people. Even if it must be admitted, as it readily would be by myself, that the 40 per cent. were probably tuberculous, this knowledge would still avail us but little, since in civilised communities our diagnosis is not required to discriminate as a rule between the tubercle-free and the tuberculous, but between the tuberculous "healthy" and the tuberculous "diseased."

I am, Sir, yours faithfully,

Queen Anne-street, W., March 18th, 1916. CLIVE RIVIERE.

THYMO-BENZENE IN BILHARZIOSIS.

To the Editor of THE LANCET.

SIR,—Mr. J. F. Briscoe's letter in THE LANCET of Jan. 15th on bilharziosis induces me to refer to the invariably good results of the treatment of this infection with thymo-benzene in doses of 2 gr. of the former and 3ss of the benzene. The thymol dissolves freely in the benzene. Given in such doses on the third day the ova are found in shoals on the slides, the majority being black. This is brought about, I suppose, by the benzene invalidating the outer envelope of the ovum and allowing blood pigments to colour the contents, miracidium, &c. In very nearly the same time and with continuation of the drugs all the subjective and objective symptoms abate. Sleep is restored, pain diminishes, and the patient rests quietly in bed at night. Giddiness is no longer complained of. The urine soon loses all appearance of blood, becomes normal in colour, with disappearance of sediment and albumin. The anæmia soon disappears, and with returning appetite strength and weight improve.

Mild cases in robust subjects lose all trace of the infection in a few weeks, no ova being found in the urine after repeated examination. In graver cases in depraved constitutions the result is not so good, but even here the patient loses all his symptoms with the exception of a few ova in the urine.

I have supposed that in the one case the worms have been in some way invalidated, toxins have evidently been rendered harmless, while secondary infections have been quite abolished. I know of no other remedy that can effect such results in this infection. It is not poisonous, and the doses above referred to have in no case given the slightest discomfort.—I am, Sir, yours faithfully,

St. Mark's, Cape Province, South Africa. WM. ROBERTSON.

THE TREATMENT OF HÆMORRHOIDS BY INJECTION.

To the Editor of THE LANCET.

SIR,—A simple story is recalled to my mind by Mr. A. S. Morley's able summary of the pros and cons of the injection treatment of hæmorrhoids in your last issue.

There was once a king in Erewhon who, like many a rich layman since his day, thought to ensure his bodily health by having a variety of medical advice. So he attached to his court two alchemists (or, as some say, physicians). Their names were Bubble and Squeak, and there was great rivalry between them.

Now, in the course of his researches Bubble discovered a herb with which he claimed he could cure the *fundamental* ailments of the human body. (Bubble was the first proctologist in history.) Squeak said that Bubble was a quack and that the herb was not only useless but also dangerous.

One day the king's wife developed a small pile. She consulted Bubble and he cured her. So the king, who was a just king, cut off Squeak's head because he was a liar. And later on the king himself developed a pile, but a large and troublesome one, which prolapsed and was irreducible if he became excited, as kings do. He too tried Bubble's remedy, but it failed. So the king, who was a just king, cut off Bubble's head, because he was a liar.

The herb, though for all we know it had its uses, fell into disrepute. This was the result of the exaggeration of the enthusiast on the one hand and the bigotry of the sceptic on the other.

I have attempted elsewhere[1] to state the situation precisely. The truth is that the injection treatment is not quackery, as some have alleged, nor is it infallible, as others would have one believe; but that in properly selected cases it will often effect a cure and thus avoid an operation, to the great gratification of the patient.

I am, Sir, yours faithfully,

Queen Anne-street, W., March 20th, 1916. IVOR BACK.

SHELL SHOCK.

To the Editor of THE LANCET.

SIR,—Lieutenant-Colonel Charles S. Myers in his communication on shell shock in THE LANCET of March 18th quotes two cases which illustrate a principle the application of which has received but little attention in connexion with the war. Cases 10 and 11 are the only two in which he records the visual acuity. In both cases the unilateral symptoms mentioned are on the side of the eye with the worse visual acuity; in the one case, right frontal headache, tremors of the right arm and weakened grip of the right hand, right hemianalgesia, hemianæsthesia, hemianosmia and hemiageusia, loss of stereognostic and vibration sense on the right side, right nerve-deafness and limitation of the right visual field; in

[1] Practitioner, March, 1915.

the other, tremors of the right arm, right hypalgesia, hemianosmia and hemiageusia, and limitation of the right visual field. The rule is more accurately stated by saying that in the presence of binocular vision unilateral functional conditions are, apart from definite trauma, on the side of the eye which has the more work to do.

In the absence of a definite lesion of the eye itself or its nerve-supply the visual acuity depends almost entirely on the refractive error, and its impairment depends upon the fact that the paresed ciliary muscle cannot deal with refractive errors it was previously perfectly able to correct. Anyone who cares to try the experiment can easily prove this by taking, say, a dozen cases of shell shock at random. Even a 0·25 cylinder may alter the visual acuity from less than 6/60 to 6/6 provided an effectual cycloplegic is used. One is forced to the conclusion that there are two centres of energy each supplying all the structures of one-half of the body, especially as functional conditions can frequently be transferred from one side of the body to the other by accurately correcting the one eye and inaccurately correcting the other.

Neurasthenia, whether following head injury or shell shock, is a general condition affecting the whole body, and corresponds to a lowering of the efficiency of a battery. The ciliary muscle shares in this general weakening. A paresis of the ciliary muscle may produce the same effects as a paresis of an external ocular muscle—giddiness, headache, nausea, diplopia. A paresed external ocular muscle is obvious; unfortunately, a paresed ciliary muscle is not. Yet the eyes are almost the only organs of the body upon which any constant voluntary effort falls during the period of rest in bed. The patient at first protects himself as far as possible by keeping his eyes shut. Later the eyes are apt to steal away an undue proportion of the diminished available energy, because without vision the patient can do little or nothing. The rest of the body is starved and various functional effects follow.

Refractive errors are almost universal, and by far the most efficient way of treating shell shock and other neurasthenic conditions is to accurately correct them and so give the weakened battery less to do by relieving it of this constant burden. In acute cases the effect is dramatic. Needless to say, an accurate correction such as will relieve nerve-strain, and a correction such as will enable the patient to read, say, 6/6, are two utterly different things. Unlimited patience is needed, and unless the correction is accurate one will probably do at least as much harm as good.

I am, Sir, yours faithfully,

T. E. HARWOOD,
Resident Ophthalmic Officer, the King George Hospital, S.E.

March 21st, 1916.

INFECTIOUS DISEASES IN IRELAND.

To the Editor of THE LANCET.

SIR,—Contrasting Dublin and Belfast for the four weeks ending March 4th in the matter of infectious disease it appears that in Dublin 154, and in Belfast 141, cases were notified. The main point of difference is that while in Dublin 32 cases of scarlet fever were notified, in Belfast they amounted to 93, and that while in Dublin 75 cases of "tuberculous phthisis" were reported, in Belfast the number was apparently only 9, but it is clear there is some factor here not explained in the published statistics.

I am, Sir, yours faithfully,

March 13th, 1916. HIBERNICUS.

The War.

THE CASUALTY LIST.

THE following names of medical officers appear among the casualties announced since our last issue:—

Killed.

Lieutenant J. Wilson, R.A.M.C., attached to the 10th Battalion Duke of Wellington's Regiment.

Lieutenant N. M. Gavin, R.A.M.C., qualified in 1901, and was a medical missionary in India with his wife, Dr. M. M. Gavin, when war broke out.

Captain R. W. Duncan, R.A.M.C., attached to the 2nd Leicester Regiment, received his medical education at Edinburgh, graduating in 1907.

Died.

Lieutenant P. H. Berry, R.A.M.C., attached to the Berks Yeomanry, was educated at Cambridge and Guy's Hospital, qualifying in 1913, and was in practice at Watford prior to joining the R.A.M.C.

Wounded.

Captain P. H. Hart, R.A.M.C., attached to the Royal Field Artillery.

Captain H. K. Rowntree, I.M.S., attached to the 53rd Sikhs.

Captain J. E. M. Boyd, R.A.M.C., attached to the 1s tConnaught Rangers.

Missing, Believed Prisoner.

Captain R. T. Vivian, R.A.M.C., attached to the 6th Battalion Devon Regiment (T.F.).

DEATHS AMONG THE SONS OF MEDICAL MEN.

The following sons of medical men must be added to our lists of those who have fallen during the war:—

Captain C. G. Giffard, 1/1st K.G.O. Gurkha Rifles, son of Mr. D. W. Giffard, M.R.C.S., of Bournemouth.

Private B. A. Johnson, The Buffs, 5th Weald of Kent (T.F.), elder son of Dr. G. L. Johnson, of Hampstead, London.

Lieutenant L. Langdon, 14th Hants Regiment (attached to the 2nd Middlesex), second son of the late T. C. Langdon, F.R.C.S., of Winchester and Broughton, Hants.

Lieutenant-Commander H. D. Edwards, R.N., D.S.O., son of Lieutenant C. R. Edwards, R.A.M.C., of Cambridge.

Second Lieutenant V. A. Farrar, 17th Lancashire Fusiliers, second son of Major R. Farrar, R.A.M.C., of the Local Government Board.

Lieutenant H. F. Birdwood, 20th London Regiment, attached to the Royal Flying Corps, only son of Dr. R. A. Birdwood, formrely medical superintendent of Park Hospital, Hither Green, London, S.E.

Second Lieutenant C. D. Morris, 9th Royal Fusiliers, only son of Dr. D. Morris, medical officer of health to the Staines Rural District Council.

SURGEON-GENERAL KEOGH: A NEW POST FOR SURGEON-GENERAL BABTIE.

The Secretary of the War Office announces that Surgeon-General W. Babtie, V.C., has been appointed to assist Surgeon-General Sir Alfred Keogh, Director-General, Army Medical Service, especially in the work of supervision of invaliding and all questions connected with the physical fitness of the troops at home.

The Secretary of the War Office adds that the reports circulated in various newspapers to the effect that Surgeon-General Sir A. Keogh has resigned are quite untrue.

We are very glad to learn that Sir Alfred Keogh is continuing to occupy the post of Director-General, where his eminent services have had such a magnificent effect on the organisation over which he presides, and on the health and

sanitation of our vast army. The false report of his retirement connected it with certain criticisms of the hospital arrangements in Mesopotamia, which arrangements were at the time in the hands of the Indian Government. The rumour gained currency owing to the reckless slanders upon the work of the Army Medical Service which have recently gained promulgation, and which came to a head in a speech made last week by Mr. Ronald McNeill in the debate upon the Army Estimates.

Surgeon-General Babtie, who has been appointed to assist Sir Alfred Keogh, served in the South African War on the staff of the Principal Medical Officer in Natal, and gained the V.C. for his gallantry at Colenso, when he assisted to bring in Lieutenant Roberts, the only son of the Commander-in-Chief, who was lying under fire mortally wounded.

THE WORK OF THE ARMY MEDICAL SERVICE.

There will be found in our Parliamentary Intelligence this week a note on a debate, if debate it can be called, which began in the House of Commons last week, the subject being nothing less than the behaviour and accomplishments of the Army Medical Staff since the beginning of the war. Proceedings commenced with an indictment levelled by Mr. Ronald McNeill, M.P. for the St. Augustine's Division of Kent, against the work of the Army Medical Staff, his accusations being that certain high members of the personnel had been responsible for grave errors entailing suffering or death upon the soldiers; that the opportunity of using the Medical Advisory Board to advise the Director-General had not been employed; and that the organisation in face of the enemy was incompetent, being old-fashioned and not designed to meet either the conditions incident upon fighting or those prevailing in trench war. We are glad that Mr. McNeill took upon himself the ungrateful task of putting into words a lot of vague talk which all of us have heard, though he can hardly be absolved from a charge of credulity. Some of the accusations which he fathered have been suggested, rather than made, at different times in different daily papers, where undoubtedly they may have given pain to those who had relatives in the army, and who were thus led to believe that our wounded were cared for in such a careless and disorderly fashion that the toll of agony and death had been vastly aggravated. Mr. McNeill admitted that he relied for his information upon hearsay, and almost every argument which could be based upon his speech was demolished by categorical statements from Colonel Arthur Lee, M.P. for the South Division of Hampshire, whose special service with the Expeditionary Force enabled him to deal on first-hand observation with the criticisms of Mr. McNeill, which were founded only upon what he and many others have been told. Members of the medical profession, both those whom Mr. McNeill asserted to be of his way of thinking and the vast majority who are familiar with the good work of the Royal Army Medical Corps, will rejoice that the accusations against its work have been largely crystallised in the attack of the Member for the St. Augustine's Division of Kent; they have now been dealt with by Colonel Lee from the important standing of a speaker who is at the same time thoroughly well informed of the facts by personal experience and entirely without personal interest as to the direction in which right or wrong may lie. It seems to us a little lucky for Mr. McNeill that he made his speech in privileged circumstances.

HOSPITAL ARRANGEMENTS IN MESOPOTAMIA.

In the House of Commons on Wednesday last Mr. Chamberlain admitted that in his opinion there had been a lamentable breakdown of the hospital arrangements in Mesopotamia. The Secretary of State for India stated that he had been informed that there had been an abundance of hospital supplies of all kinds at Basra, but there appeared to have been an inexcusable shortage of necessary medical appliances above that base, due in all probability to the enormous difficulties of river transport. Mr. Chamberlain did not, however, consider that the hardships and perils of transport accounted for all the deficiencies in medical supplies, and he detailed the measures which were being taken to prevent future default.

BENEVOLENT FUNDS FOR THE SERVICES AUXILIARY TO THE ROYAL ARMY MEDICAL CORPS.

It has been suggested that benevolent societies be formed for the benefit of the families of officers and other ranks of the Medical Services auxiliary to the Regular Royal Army Medical Corps—viz., the Special Reserve, the Territorial Force, and New Army. Funds would be raised by voluntary subscriptions, and it has been proposed that each branch of the Service should appoint a committee of 5 to 7 members to administer its own funds.

A meeting, to be presided over by the Director-General, will be held in the lecture theatre of the Royal Army Medical College, Grosvenor-road, S.W., on Wednesday, May 10th, 1916, at 3 P.M., and it is hoped that as many officers as possible will attend. In the meantime any inquiries may be referred to Lieutenant-Colonel G. St. C. Thom, R.A.M.C., War Office, S.W.

WOUNDED ALLIES RELIEF COMMITTEE.—Owing to a request from the Comité de Vacances du Soldat, arrangements have been made by the Wounded Allies Relief Committee to accommodate Belgian soldiers on leave from the front at their No. 2 Home, 45, Courtfield-gardens, London, S.W. The home is primarily for the benefit of Belgian soldiers who have lost a limb or are otherwise disabled through the war, and it is satisfactory to know that through the supplying of artificial limbs by the committee many of the disabled men who have been housed there are now able to be about again and work.—The committee has offered to present to the Italian Government a motor field operating theatre for the benefit of our wounded Italian allies, and the offer has been accepted.

THE PREVENTION OF TRENCH-FOOT.—An interesting commentary on the means for preventing trench-foot, which were discussed at some length in THE LANCET (Dec. 11th, 1915) at the beginning of the winter, is contained in a letter from the late Lieutenant A. Noël Garrod, R.A.M.C., in the March number of the *St. Bartholomew's Hospital Journal*. As regimental medical officer, he describes how attached to his staff was an expert masseur, whose duty it was to instruct the men in the care of their feet. He continues: "All this apparent fuss about massage is really of great importance in the prevention of 'trench-foot,' of which so much was seen last winter. Now an arrangement is arrived at by which each man before entering the trenches thoroughly washes his feet and then well rubs in either whale oil, anti-frost-bite grease, or better, a mixture of lard and mustard. This process is continued until the feet are quite dry, then dry socks are put on and over the whole, gum-boots reaching well up to the thighs are drawn on. This process, if possible, is repeated every 24 hours, the greatest importance being paid to keeping the feet dry and warm and to seeing that no constriction of any sort, such as garters, impedes the circulation in the legs. The use of puttees is now, I believe, universally condemned, and if they have to be worn, should be very lightly rolled." It is of no little interest to note the evidence here given of the putting into practice of all the precautions which we foreshadowed.

OBITUARY OF THE WAR.

JOSEPH THORP WAITE, L.R.C.P. & S. EDIN.,

LIEUTENANT, 5TH EAST KENT REGIMENT.

Lieutenant J. T. Waite, who was killed in action on Jan. 21st in Mesopotamia, at the age of 45, held a combatant commission, and was the eldest son of the late Dr. William Waite, a leading practitioner of Halifax. He was educated at Bootham School, York, and studied medicine in Manchester and Edinburgh, taking the diploma of L.R.C.P. Edin. in 1896. In order to gain a wide experience, and at the same time gratify his love of the sea, he took service as surgeon with the Orient and Elder Dempster lines, and made voyages to Australia and South Africa. He then settled down to practice in York, spending such leisure as the care of his patients afforded in a small yacht, which he sailed himself, with his wife or a friend as crew. The spirit of adventure was one of his most marked characteristics, and he eagerly accepted the opportunity of service abroad which a medical appointment under the Colonial Office afforded him in Northern Nigeria. In this outpost of empire his administrative capacity had wider scope than was possible at home. His activities were by no means confined to the practice of his profession, since he frequently found himself obliged to undertake duties of a legal and military nature. It was in the last-named capacity that, with a handful of men from the West African Field Force, he entered a native town and removed therefrom two chiefs whose views on the disagreeable necessity of paying taxes did not coincide with those of the Colonial Office. This adventure called for a display of that firmness of purpose and unobtrusive daring which Lieutenant Waite possessed in a remarkable degree. Returning to England, he settled at Pluckley, in Kent, where he held the parish appointment, gave ambulance lectures to the railway servants, and was medical officer to the Pluckley brickworks. These activities proving an insufficient outlet for his energies, he accepted a commission in the 5th Buffs, with charge of the machine-guns, and trained the men who fought with him in Mesopotamia. At the outbreak of war he proceeded with his regiment to Kamptee, Central Provinces, India, where he continued the training of his gunners, and in November, 1915 left for Mesopotamia, forming part of General Aylmer's relief force. After surviving the terrible fighting of Jan. 6th to 10th, in which the regiment earned the high praise of the brigadier, Lieutenant Waite fell at the head of his men in a desperate attack upon an enormously strong Turkish position. Lieutenant Waite married the eldest daughter of the late Frederic Smith, of Altrincham, and leaves a widow and one son.

PETERSWALD PATTISON, M.B., CH.B. EDIN.,

LIEUTENANT, ROYAL ARMY MEDICAL CORPS.

Lieutenant P. Pattison, who died in London on Feb. 22nd, at the age of 39 years, as the result of illness contracted on active service, was born at Edinburgh. Educated at the Academy, he proceeded to Edinburgh University, graduating M.B., Ch.B. in 1901, and obtaining in 1910 the Diploma of Public Health of the Conjoint Board in Scotland. After graduation his desire was for a naval surgeonship and sea life, but at his father's request he relinquished the idea, undertaking various house surgeonships in Scotland and England and filling his years with a sound practical experience. In 1911 Dr. Pattison was appointed assistant school medical officer and assistant medical officer of health for the counties of Fife and Kinross, discharging his duties faithfully and well and with eminent commonsense. Early in November, 1914, he obtained leave of absence to join the Royal Army Medical Corps, and was posted to Woolwich Hospital until he left for France in May, 1915, being attached to the 4th King's Own (Yorkshire Light Infantry) in the trenches as medical officer a few days later. One who knew him well testifies that his knowledge of his work and his happy effervescing humour rapidly secured for him the respect and affection of both officers and men, and it was with genuine regret that they parted when Lieutenant Pattison was invalided home at the end of July with the grave symptoms indicative of the condition which ultimately caused his death. The same friend adds: "His kindly tact, patience, and happy, genial disposition ensured his success in his school work and also in the social sphere; his keen sense of humour streaked lightly the somewhat monotonous routine of school inspection work. By his death the county of Fife, in which the bulk of his work was done, has lost an efficient officer and his colleagues a genuine friend."

RICHARD GAVIN BROWN, M.B., CH.B. ABERD.,

LIEUTENANT, ROYAL ARMY MEDICAL CORPS.

Lieutenant R. G. Brown, who died on Feb. 14th, as a result of dysentery contracted on active service, at the age of 33 years, was the only surviving son of Deputy Inspector-General R. Gavin Brown, R.N. He took his medical course at Aberdeen University, graduating in 1903, and after resident appointments at Lambeth Infirmary and Tynemouth, settled in private practice at Portsmouth, becoming assistant anæsthetist at the Royal Hospital. On the outbreak of war he was appointed civil surgeon at the Alexandra Hospital, Cosham, and in March, 1915, obtained a temporary commission in the Royal Army Medical Corps. At the beginning of July he was sent out to Gallipoli with the 14th Casualty Clearing Station attached to the 11th Division, which landed at Suvla Bay on August 6th under heavy fire. In the engagement which followed he attended the wounded for 44 consecutive hours, exposed to continuous shelling from the Turkish batteries. After three months' excellent work he was invalided home with dysentery, and after apparent convalescence succumbed to an acute relapse. Dr. Gavin Brown leaves a widow, who, during his absence abroad, did sister's duties at the Graylingwell War Hospital, Chichester.

Surgeon-Probationer J. D. Arthur, R.N.V.R., one of the survivors of the wreck of H.M.S. *Tara* who were captured by the Senussi, is reported by the Admiralty as having been rescued from captivity.

THE CENTRAL MEDICAL WAR COMMITTEE: CONFERENCES OF REPRESENTATIVES OF LOCAL MEDICAL WAR COMMITTEES.

It was announced last week that the Central Medical War Committee would hold immediately four conferences in Leeds, London, Birmingham, and Bristol, at which representatives of Local Medical War Committees would be present. The Conference in Leeds was held on Tuesday, March 21st, the chair being taken by Major A. S. F. Leyton, R.A.M.C. (T.F.), chairman of the Leeds Local Medical War Committee, and the arrangements were made by Dr. James Allan, honorary secretary of the Leeds Committee. Dr. Alfred Cox attended on behalf of the Central Medical War Committee. There were present the members of the Leeds Local Medical War Committee, some local practitioners, and the representatives of the Local Medical War Committees of:—

English Border	Harrogate	Lincolnshire	Oldham
Furness	E. Yorks	(Holland)	Blackburn
Kendal	Halifax	Chesterfield	Manchester
Newcastle-on-Tyne	Sheffield	Burnley	Liverpool
Gateshead	Rotherham	Bury	Hyde
Sunderland	Bradford	Ashton-under-Lyne	Rochdale
Durham	Huddersfield	Leigh	Mid Cheshire
Bishop Auckland	Lincolnshire	Southport	North North-
York	Kesteven)	Blackpool	umberland

Dr. Cox, addressing the meeting, said that the main business was to enlist the enthusiasm of those present in making the Enrolment Scheme a success, and judging from the figures of the Committees represented there, there could be little doubt of success in most of the areas in the North. He dealt with the various objections that had been raised to the Enrolment Scheme, and said that it was apparent that the method of obtaining recruits for the R.A.M.C. which had been used up to now would not do for the future. We had got down to a stratum of the profession which found it extremely difficult to give up its civil work, and therefore closer organisation was required. No alternative to enrolment had been suggested except compulsion, and it was impossible to apply it to the medical profession alone. Those present were just as capable as the Central Medical War Committee of judging how the opinion of the country was tending and whether all-round compulsion was likely to be introduced. But compulsion, though it would render the task of the profession easier by ensuring that no man should escape doing his duty, would only remove the smallest of the profession's difficulties. The Local Committees would still be faced with the problems of taking the right men in the right order, of organising the medical work of the district so as to distribute the burden on those remaining as equally as possible, and of protecting the interests of those who go. These problems were common both to compulsion and enrolment, and as practical men we must use the means we possessed because the needs of the country could not wait. The Enrolment Scheme was an attempt to organise the medical profession by the medical profession for the good of the nation. Some people asked why the medical profession should do this work which really should fall on the State. It was to the advantage of the profession to organise itself and thus see that local difficulties were dealt with by people who knew those difficulties. The Enrolment Scheme, if a success, would be fair and economical. It would not be fair unless the great majority of the men enrolled, but the Central Committee had given its promise that it would not victimise the public-spirited men who enrolled by proceeding to call on them if the response was inadequate. What should be considered an adequate response could not be settled until we knew the total number of men we had to deal with, and that could not be ascertained until the Local Committees had eliminated from their lists the men who were ineligible for enrolment. But if the scheme were a success it would be fair, because it would ensure that all the men (with exceptions who could always be relied upon *not* to help in any organised scheme) were available for doing their country's work, whether in the army or by remaining at home. The fairness of the scheme lay largely in the fact that it was to be worked by the coöperation of Local Committees, which would bring to bear local knowledge, with a Central Committee which could be relied upon to take a large and impartial view. In addition, there was the scheme of classification, which would serve as a rough guide to selection, so that the men with the fewest ties and difficulties would go first. The scheme was economical because it would form a reserve for the Royal Army Medical Corps, which could be drawn upon as wanted. Dr. Cox concluded by expressing the opinion of the Central Medical War Committee that the medical profession had now a magnificent opportunity of showing its organising capacity and patriotism.

Many questions were asked, and certain difficulties were raised which were mainly answered by the experience of the representatives present. The meeting was a most satisfactory one, and clearly showed that the Central Medical War Committee could depend upon the loyal and even enthusiastic support of those present

The Conference in London was held on Wednesday March 22nd, the chair being taken by Dr. C. Buttar. Upwards of 80 persons were present representing the 73 Local Medical War Committees of London and the Home Counties. At the outset Mr. E. B. Turner, F.R.C.S., gave a short address, and the proceedings then took the form of a general debate following on question and answer, with explanatory remarks from the chair. The chief difficulty expressed was that if enrolment should not be complete, or nearly so, it would press on those who enrolled with the same feeling of hardship as in the case of the married man who voluntarily attested for combatant service under the Derby Scheme To meet this difficulty, an assurance was given on behalf of the Central Committee that unless a large proportion of the remaining available medical men under 45 enrolled, the scheme would be reported a failure and not proceeded with. In this case it would be optional for any man to withdraw his offer of enrolment. No precise percentage figure was stated, but the chairman of the Central Committee undertook to bring the urgent desire of some of the London representatives for an exact figure before the next sitting of the Committee. The hope was expressed that after these assurances medical men would not hesitate to make the voluntary scheme a success by enrolling at once. It was understood that success was already assured in Scotland, and practically so in the North of England, while London and the Home Counties were holding back on grounds which the London meeting of representatives should do much to meet.

Confidence in the action of the Central Committee has certainly been promoted by the free discussion of difficulties at these meetings.

AMBULANCE CARRIAGES.—The late Captain Eric Back, R.N., who perished in H.M.S. *Natal, multis flebilis*, was the first to arrange a convenient ambulance carriage for the naval cot in which the sick and wounded are carried. He was at that time Commander of H.M.S. *Excellent* (Whale Island), the Gunnery School, and made a low tray of bicycle tube with four sockets to take the corners of the cot, mounted this on a pair of bicycle wheels with pneumatic tyres, and turned up the ends of the tray for the convenience of the bluejacket who wheeled it. Thus he greatly increased the comfort of the sick and injured on their way to hospital. Besides, it had hitherto required four men to carry each patient down to the boat, while now a single man sufficed to wheel the carriage along, and there was no jolting. Extemporised under-carriages for stretchers are being used at the front, and Major W. W. Reno, of the Medical Corps, United States Army, proposes to make all stretchers wheeled, for he finds that two men with the ordinary stretcher will only carry about half the men they can collect in the same time if their stretcher be put on wheels. He has two wheels, 34 in. in diameter, on a 3 ft. 6 in. axle, from which rise two uprights, ending each in a clutch which holds one pole of the service stretcher. These under-carriages take little room, and are carried easily in the mule ambulance, which is the standard pattern of the United States service. Further, shafts can be adapted to this Reno stretcher, and it can be drawn either by one of the mules or by a motor-bicycle. The under-carriage has several other usefulnesses, as detailed by the inventor in the *Military Surgeon* for February. But another and a very different proposal also comes from the United States Army, for Major Nelson desires to facilitate the evacuation of wounded, seven of them at one time, in a light motor-ambulance carrying three stretchers and weighing 15 cwt. and drawing a 6¼ cwt. trailer holding four stretchers. The trailer can be hooked on at either end (does not require to be turned) and its under-carriage is so arranged that its wheels track with those of the ambulance. Thus, it can carry seven wounded at a time on good roads, and at the very worst it can always move three. The ambulance and trailer cost, to commence with, just the price of the general service mule ambulance and its team and harness and the upkeep is infinitely less; the daily usefulness measured in number of wounded evacuated and the comfort to the wounded should be immensely increased, as is all laid out in detail in Major Nelson's note.

Obituary.

SIR CHARLES BENT BALL, BART., M.D. DUB., F.R.C.S. ENG. AND IREL.,

REGIUS PROFESSOR OF SURGERY IN THE UNIVERSITY OF DUBLIN; SURGEON TO SIR PATRICK DUN'S HOSPITAL; HONORARY SURGEON TO H.M. THE KING IN IRELAND.

WE regret to announce the death of Sir Charles Bent Ball, which occurred in Dublin on March 17th, at the age of 65 years. The event was not unexpected, for he had been ill for some months.

Nearly the whole of Sir Charles Bent Ball's life was spent in Dublin. His father, Robert Ball, LL.D., was director of the Dublin Museum of Science and Art, and Sir Robert Stawell Ball, the astronomer, was his elder brother. He himself had a successful career as a student at Trinity College, obtaining his degree in Arts in 1871 and in medicine in the following year. After a brief period of practice in South Wales, he obtained a Poor-law appointment in Dublin and settled there permanently, being soon appointed surgeon to Sir Patrick Dun's Hospital. In 1879 he took the Fellowship of the Royal College of Surgeons in Ireland, and, resigning his Poor-law appointment, devoted himself thenceforth entirely to surgery. In 1895 he became University Anatomist, and in the same year he succeeded the late Sir George Porter as Regius professor of surgery in the University of Dublin, posts which he held until his death. He was for many years a member of the Council of the Royal College of Surgeons in Ireland, and in 1900 he was elected an honorary Fellow of the Royal College of Surgeons of England. Honours and distinctions now came quickly to him. In 1902 he went to San Francisco as Lane lecturer; in 1903, the year in which he received his knighthood, he was Erasmus Wilson lecturer at the Royal College of Surgeons of England; in 1911 he was given a baronetcy, having been for some years past honorary surgeon to the King in Ireland. In 1914, after the outbreak of war, he was appointed consulting surgeon to the troops in Ireland with the rank of lieutenant-colonel. For the past 10 years he was the representative of Dublin University on the General Medical Council; he was President of the Royal Academy of Medicine in Ireland from 1909 to 1912, and he was more recently President of the Royal Zoological Society of Ireland, in the working of which society he took great interest. He was consulting surgeon to a large number of institutions in Dublin; among these were Dr. Steevens', the Orthopædic, the Dental, and Monkstown Hospitals, the Stewart Institution, and the Masonic Girls' School. He was also Lord Chancellor's consulting surgical visitor in lunacy, and medical referee for Dublin under the Workmen's Compensation Act.

It will be seen that he was a veritable pluralist in public work. In professional work, though a good all-round surgeon, he was best known as a specialist in rectal diseases. His hand-book on "The Rectum and Anus, their Diseases and Treatment," published in 1894, had a well-merited success, and in 1908 he published another book entitled "The Rectum, its Diseases and Developmental Defects," which showed both his learning and his practical equipment. The book was to a certain extent founded upon, or a reissue of, his earlier work, brought up to date, and including the Lane lectures and the Erasmus Wilson lectures, in which discourses he had dealt with different rectal conditions and diseases. He contributed the article on rectal surgery to "Treves's System of Surgery," and occasionally sent papers to the surgical journals. In his teaching he was clear and definite, with the gift of arranging a discourse in logical order. He was an ingenious and cool operator, ready for every emergency. In his judgment on a case he took a wide view, and physicians who asked for his help always felt that he gave full weight to other than narrowly surgical points.

For many years Sir Charles Ball was the most prominent figure in Irish surgery. He married a daughter of the late Mr. D. Kinahan, of Roebuck Park, Dublin, by whom he had four daughters and three sons, the eldest of whom, Mr. C. Arthur Kinahan Ball, F.R.C.S. Irel., surgeon to Sir Patrick Dun's Hospital, succeeds to the title.

Medical News.

ROYAL COLLEGE OF SURGEONS OF EDINBURGH.—At the recent dental examinations the following candidates were successful:—

FIRST DENTAL EXAMINATION.

Edward Clive Smith, E. Loring Kelly, Meindent de Villiers, Oscar U. Gottlieb Reinecke, John Sharpe, Nico Hofmeyr Albertyn, and Cayetano Bethencourt.

Chemistry and Physics.—Egbert Johan Charle Steyn, Gordon Smith Richardson, Alexander Phillips, Andrew John Molyneaux, Alan Wilson Hart, and Mary Constable Adam.

FINAL DENTAL EXAMINATION.

William Alexander Rankin, Glasgow; Aubrey Claud Forster Barrow, Birmingham; George William Young, Kidderminster; Hamish Mackay Cranna, Fraserburgh; James Leo Farnon, Morpeth; John Forbes Campbell, Kincardineshire; Douglas Mitchell Mackenzie, Inverness; William Archibald Mein, Bombay; David Coupar Lamond, Dundee; Johannes Jacobus de Witt, South Africa; and Henry Cecil Mackenzie Morgan, Stornoway.

UNIVERSITY OF DURHAM: FACULTY OF MEDICINE.—At examinations held recently the following candidates were successful:—

FIRST EXAMINATION FOR THE DEGREE OF BACHELOR OF MEDICINE.

Elementary Anatomy and Biology, Chemistry and Physics.—Tom Hugh Ronald Anderson, Neil Robertson Beattie, Dorothy Olga Sutherland Blair, Robson Christie Brown (second-class honours), Richard Leslie Dagger (second-class honours), Nan Coxon, Hugh Leslie Mather, Robert Paulin Wanless, and Philomena Ryland Whitaker.

Elementary Anatomy.—Mark Julius Erdberg, Kun Piu Leung, May Raw, and Robert Sanderson.

SECOND EXAMINATION FOR THE DEGREE OF BACHELOR OF MEDICINE.

Anatomy and Physiology.—John Maurice Brydson (second-class honours), Sujan Raj Chatterji, Rev. Samuel Foskett, Ibrahim Girgis, Samuel Elijah Goulstine, John Parkinson Higham, James Richard Hughes (second-class honours), David Levinstein, Habib Toma, Hans Wilhelm Walther, and George Roebuck Woodhead.

Anatomy.—Iris Marjorie Cheeseright.

FIRST-AID INSTRUCTION.—The President of the United States has appointed a commission to investigate first-aid methods, packages, the standardisation of first-aid equipment, and an identical course of instruction to be followed throughout the country. General W. C. Gorgas, Surgeon-General of the United States Army, is President; Rupert Blue, Surgeon-General of the Public Health Service, is Vice-President; and the American Medical Association, Association of Railway Surgeons, and Surgical Association are represented. Great interest in first-aid has developed everywhere throughout the United States.

MEDICAL SICKNESS AND ACCIDENT SOCIETY.—The usual monthly meeting of the committee of this society was held at 300, High Holborn, W.C., on March 17th, Dr. F. J. Allan being in the chair. The accounts presented showed a margin in favour of the society in the sickness expectation—a rather unusual event at this time of the year. With so many members serving their country in all parts of the world, it is impossible to regard the experience as normal. The new business was satisfactory, but the fees for locum-tenents are higher, which influences the sum necessary to cover this expenditure. The permanency of the contract for sickness benefit should appeal to members of

the profession. No matter what claims are made, the contract holds good until the age of 65, and at that age the annuity scheme, which is being offered for approval at the annual meeting, would prove a useful and valuable benefit in place of the sickness benefit.

HEALTH VISITORS AND INFANT WELFARE CERTIFICATES.—The next course of training, for which two scholarships are offered, will commence in September next. The certificates awarded by the governing body of the Battersea Polytechnic to successful students who have attended the seven months' course of training for health visitors and infant welfare workers are recognised by the Local Government Board.

EDINBURGH EYE INFIRMARY.—At the annual meeting of the contributors to the Edinburgh Eye, Ear, and Throat Infirmary attention was drawn to the fact that six of the medical officers were absent on military duties, with the result that the work had been necessarily curtailed. It was reported that the number of patients treated during last year was 3993, as compared with 4692 in 1914 and 5102 in 1913.

ORDER OF THE EXCELLENT CROP.—Mr. Gordon O'Neill, professor of obstetrics in the Peiyang Medical College, Tientsin, has been given permission by the King to accept and wear the decoration of the Seventh Class of the Order of the Excellent Crop, which has been conferred upon him by the President of the Republic of China in recognition of valuable services rendered.

THE death in announced of Miss Fanny Cresswell Paris at the great age of 102. Miss Paris was the second daughter of John Ayrton Paris, M.D., F.R.S., D.C.L., who was President of the Royal College of Physicians of London so far back as 1844.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

Organisation of the Army Medical Services.

CONSIDERABLE interest was shown at Westminster in connexion with the criticisms which Mr. R. MCNEILL made in a speech on the organisation of the Army Medical Services. The principal reply on behalf of the Government was made by Colonel A. LEE, the Parliamentary Secretary (Military) to the Ministry of Munitions, who for nine months watched the practical working of the medical services in the field. He maintained that the criticisms were unjustifiable and ill-informed.

HOUSE OF COMMONS.

WEDNESDAY, MARCH 15TH.

Organisation of the Army Medical Services.

In the debate on Army Estimates,

Mr. R. MCNEILL, in the course of a long speech, drew attention to matters concerned with the organisation of the Army Medical Service. He referred to the reorganisation which followed on the South African War, and contended that the moment that war broke out the Advisory Board ought to have been called together. It ought to have been strengthened by some of the best of the younger generation of scientific men, but the very first moment the war broke out the Board was scrapped. Its very important functions were usurped by Director-General Sir Arthur Sloggett. Did he possess the organising skill of Napoleon and the scientific genius of Lister and Paget? He was given complete control over the administration of the Army Medical Service and within a week took sick leave from the War Office. Advantage was not taken of his disappearance to appoint to this tremendously responsible post some young, vigorous, and up-to-date surgeon of the new school, but a stop-gap deputy, Surgeon-General Macpherson, undoubtedly a man of very considerable ability in many respects, who possessed many academic degrees, was appointed, of whom Mr. McNeill said, his information from responsible quarters was that he was unfit for the post. At the end of nine weeks he went as surgeon-general to the First Army in France, and in that capacity and in a later appointment he was, said Mr. McNeill, responsible for a terrible breakdown at one place and a greater failure at another, when he became head of our army medical arrangements at Salonika. Mr. McNeill went on to speak of the appointment of Sir Alfred Keogh as Director-General, and expressed regret that he had not brought the organisation of the Advisory Board into operation. He also criticised the organisation of the Army Medical Service on the basis of the divisional system, and the selection of Poperinghe as a clearing station for Ypres at the time of the first battle. At Hooge the doctors of one division whose troops were engaged were working for 30, 40, and 50 hours on end. There were numbers of doctors of other divisions actually in the town at the time not doing a hand's turn simply because they belonged to other divisions, the troops of which had not been engaged. The Under Secretary for War might say that the battle of Ypres was early in the war and that the arrangements had not been perfected. Let him therefore give an example from the battle of Loos. When the fighting was going on at Loos wounded men were left lying all night out in the open and in the fields and streets of Chogne, Lapoguy, Delair, and other villages because all the hospitals were overfull and the staffs were overworked. The saddest part of it was—and this brought them back again to the question of organisation—that within a very short distance, within a few miles, there were hundreds of doctors of other divisions who could easily have been brought there by motor-cars. He was not laying the smallest blame upon the doctors. He recommended a system of movable hospitals all the way along the front, within easy access by motor-car of the firing line, placed as far as possible off the main road, so that it might be kept clear for transport and supplies. Operation cases should be retained in the movable hospitals. With regard to the question of abdominal surgery at the front, as recently as January 1st, he said, Sir Anthony Bowlby, writing in THE LANCET, emphasised the possibility of saving life by immediate operations in abdominal cases. There could have been no occasion to do that unless it was the case that the practice had not become established and he was agitating for its adoption. The War Office was failing to make the best possible use of the talent at the disposal of the nation, as no attempt was made to use the medical man's special qualifications at the points where those special qualifications were most wanted. A very large body of highly instructed medical opinion held the views which he had been trying to put before the House, and he pressed for an investigation.

THURSDAY, MARCH 16TH.

Organisation of the Army Medical Services.

On the resumed debate on Army Estimates,

Colonel A. LEE (Parliamentary Secretary to the Ministry of Munitions) said: I think an unfair attack was made yesterday by the honourable Member for St. Augustine's (Mr. R. McNeill) upon the medical arrangements of our armies. He delivered an indictment covering the whole medical service in the field, its work and organisation, and disfigured that speech by bitter personal attacks upon distinguished officers of the Royal Army Medical Corps. I feel bound to repudiate some of the grosser charges which were levelled by my honourable friend against the reputation and record of the Royal Army Medical Corps in the field. I say, speaking with some personal knowledge of the subject, that there is no corps in the British Army, no branch of the service which has done finer, more effective, and more gallant service during the present war. In its officers, its men, and the noble women who have been associated with it in the nursing services, there is no section of the British Army that deserves more praise and gratitude from the people of this country. Let me state my reason for intervening in this debate. At the commencement of the war I accepted an appointment as Lord Kitchener's special personal representative to proceed to the front to watch and report upon the practical working of the medical services in the field, especially with regard to the collection, care, and evacuation of the wounded at the front. I do not profess, of course, that I had any technical knowledge in regard to these matters or any special qualifications beyond those possessed by any layman who has taken an interest in this matter for some years past, and who also, as a soldier, has some knowledge of the practical difficulties which distinguish war conditions from those of peace. After all, it is necessary, in considering this matter, to realise that war conditions are not the same as those of peace, and that is often forgotten by critics who, whilst no doubt animated by the purest and most disinterested motives—I am referring now to professional critics, whether they come from Glasgow or Portland-place or any other locality—are apt not to realise the difficulties with which the medical services are confronted under the actual conditions of war, and this has led them in many instances to be grossly unfair to their colleagues overseas. I spent some nine months doing nothing else but investigating these matters on the spot, and I duly reported the results to Lord Kitchener. During the whole of those nine months I had unique opportunities of watching the daily and nightly work of the medical services at the battle of the Aisne, at both battles of Ypres, at Neuve Chapelle, Festubert, and others. All I can say as the result of that experience is that I utterly fail to recognise in the harrowing tale which my honourable friend gave of the

medical services anything which in the faintest degree corresponded to the facts as I saw them. He has been misled by over-zealous informants.

The Attack upon Distinguished Officers.

I will deal in a few words with what I can only call the very unfair personal attack which my honourable friend made upon two distinguished officers. My honourable friend was careful and guarded in his references to Sir Alfred Keogh. It is well, because if there is any official at the War Office who is universally recognised as a success in view of his great talents, his alert and far-seeing mind in regard to these matters of medical service, his wisdom, patience, and urbanity in dealing with the innumerable complaints and representations which come before him, it is Sir Alfred Keogh; and I think that what he has had to do in this war entitles him to the highest praise. But there was no specially bitter attack on him. There was, however, a very bitter and vicious attack made upon two other distinguished officers, Sir Arthur Sloggett and Surgeon-General Macpherson. When my honourable friend went out of his way to sneer at Sir Arthur Sloggett because at the commencement of the war he was taken ill and had to be absent from office, it was a taunt unworthy of any Member of this House. Of Sir Arthur Sloggett, the honourable Member for St. Augustine's asked, "Does he combine the organising skill of Napoleon with the scientific genius of Lister and Paget?" I do not know whether the distinguished informants who supplied him with material for his attack fancy that they possess these high qualifications, but I must confess that I have met at home in this country surgeons who had not made the sacrifices which these gallant officers had made, but who have given me the impression that they probably held a higher view of their qualifications than is held generally by their colleagues and by the profession at large. Sir Arthur Sloggett has great qualities for the head of the services in the field. He has experience, tact, and great powers of dealing with the difficult personal situations which are bound to arise, like that which arose at the beginning of the campaign between the Royal Army Medical Corps and the Red Cross. I believe that hardly any other man would have settled that matter in the amicable way in which it was settled. He is exceedingly accessible to suggestions, and he was responsible for establishing in the field that advisory council of eminent civilian consultants who meet periodically and give him and the Medical Services the benefits of their advice. My honourable friend made an even more bitter attack upon Surgeon-General Macpherson. He said that he was the officer who was responsible for the terrible breakdown in the medical arrangements at the battle of Festubert. The only objection to that statement is that there was no breakdown at the battle of Festubert. I was specially commissioned to watch the medical arrangements throughout that battle. Not only was there no breakdown, but the care and evacuation of the wounded proceeded almost without a hitch, in spite of the fact that an enormous number of wounded had to go through one clearing station. There was no criticism whatever at the time. There was no complaint either by the officers or the men. My honourable friend has been very much misinformed in this matter. He said that as a result this distinguished officer was removed from the First Army to another army. That is absolutely untrue; he remained in the First Army. My honourable friend suggested that he was subsequently removed on account of his failure and sent to Salonika. That again is absolutely untrue. When the Expeditionary Force of the Mediterranean was set up the Service was asked for an officer who had the highest experience in actual work in the field in France, and Surgeon-General Macpherson was selected on account of his high qualifications. These are personal matters and I do not dwell upon them unduly. I must, however, confess that I feel some indignation at these attacks behind their backs upon gallant officers who are doing their utmost in the field by armchair critics at home.

Organisation of the Medical Service in the Field.

My honourable friend passed on to make an attack on the organisation of the medical service in the field. What he wished to do would deprive the divisional medical arrangements of their mobility, and I say that it would be a fatal mistake to do as he suggests. One of the chief anxieties of heads of the medical staff all through this campaign has been the fear lest the sedentary character of the war at the moment would deprive the medical service of its flexibility, power of rapid movement, of adapting itself to new conditions, and all those other necessities in the event of an army advancing. He instanced Ypres. I was present throughout the first and second battles of Ypres, and I really cannot understand what my honourable friend is driving at. What he has said bears no relation to the facts. He talks, for example, of the mistake that was made in establishing a clearing station at Poperinghe. Poperinghe was the only town within easy reach of Ypres where there were any buildings of any sufficient size. We have had to do with lesser accommodation since. It was not under fire, and it was suitable in every way. My honourable friend talks about how much better it would have been if the wounded had been diverted by the natural communications to the other clearing stations. If he knew anything of the conditions of war, in what state the roads were then, and if he knew the atrocious agony which the wounded suffer even in the best motor ambulances in trying to negotiate these impossible side roads in Flanders, he would realise that his suggestion was really one without substance and one which would only increase the sufferings of the wounded. As a matter of fact, the wounded were not evacuated from Ypres by motor ambulance at all. They were evacuated by train, in which there were no possibilities of the troubles to which he refers. I saw practically every wounded man evacuated and taken out of the area. I remember that on Oct. 31st, 1914, we evacuated 1600 men in the course of the night without any hitch. The achievement is one which reflects the greatest credit on the Army Medical Service. Then the honourable Member went on to talk about the condition of things at Hooge, and about doctors working there 40 or 50 hours at a stretch. That is not an impossible occurrence in time of war with the wounded so close up to the firing line. When my honourable friend talks about these doctors being overworked whilst the medical staffs of other divisions were waiting in Ypres with nothing to do, because their troops were not engaged, he has simply forgotten the fact that we were so hard pressed for men that when the great final German attacks came and the Prussian Guards were pushed forward every man was put into the firing line. Does he really imagine that within two or three miles there were divisions of troops and that there were medical services perfectly free? Such a suggestion is perfectly ludicrous. There was not one single unit that was not engaged in the battle.

Wounded on the Battlefield.

The honourable gentleman spoke about wounded men lying out on the field. Has he any conception of the difficulties of clearing a battlefield during the night amid a constant rain of shell fire? Does he think that directly a man is wounded and is on the ground he is surrounded by nurses who cool his fevered brow and put him into bed. The men who are lying out in the open are lying there because it is one of the inevitable conditions of war. The collection of the wounded and their evacuation have been carried out with a despatch and regularity which have never before been known in war. I challenge the honourable Member to produce evidence that would satisfy any reasonable man that there has been anything approaching a breakdown in any of these great battles. I have interrogated thousands of wounded officers and men and so far from there being any complaint, there has been one long story of gratitude and praise for the way in which they had been treated by the medical service.

Field Ambulances.

My honourable friend asks that the wounded should be attended by a system of movable hospitals with easy access by motor-car. That is exactly what exists at the present time and has always existed. If by hospitals he means buildings or rather perhaps marquees fitted with operating-rooms and supplied with surgeons, nurses, anæsthetists, and everything which is necessary for operating under modern conditions, then they exist already as close to the firing as is compatible with not being under shell fire. That is rather an important point. Are they to be within the zone of shell fire or are they not? Does my honourable friend realise what the moral and physical effect of high-explosive shells dropped on a hospital is? Does he realise what it must be to attempt operations under these conditions? It is not a question of whether you are afraid or not afraid, but whether it is physically and mentally possible to conduct operations under such conditions. If my honourable friend wishes it, I will show him a map of the arrangements for hospitals at the front, and he will then see that the clearing stations where these facilities exist are close up to the zone of shell fire all along the British front, and they cannot be nearer without being under direct shell fire. In cases when they have been pushed up further there have been deplorable results to the patients and staff. The honourable Member said that they ought to be off the main road with easy lateral communications. It is a thing absolutely impossible. Following up this idea, I understand that the suggestion is that there should be some new form of movable hospital pushed up in close proximity to the firing line, where incidentally the military authorities would not allow it for a moment because it would hamper their operations and where it would instantly be spotted by the enemy aeroplanes and become the constant mark of artillery fire. What are you going to do with the wounded man after he is operated upon in a movable hospital? Every doctor knows that after an

abdominal operation a man must be kept quiet for a week. A movable hospital has to move on. What is to be done with the man? As a matter of fact, the only possible advantage would be that a man could be operated on a few minutes, at the outside half an hour, sooner than he would be in the clearing station, where every proper facility is provided. The honourable Member says that abdominal surgery has only recently been introduced at the front. It was, in fact, in operation during the whole time I was at the front. In Standing Orders to the Medical Service of March 27th, 1915, there is reference to the conditions under which abdominal operations should be conducted, not merely in the clearing stations, but, if necessary, in the field ambulances nearer the front; and the honourable Member knows that the abdominal operations have been singularly successful, there having been a very large proportion of recoveries. Really, he has once more succeeded in discovering what Lord Morley used to describe in this House as *nidus equinus*.

A Vigorous Protest.

The honourable gentleman demands a disinterested investigation. How well we know that demand. The tree must always be turned up by the roots to see how it is growing. I hope the honourable Member will allow that at any rate in my services I was disinterested. But I do feel compelled by the sense of common justice and decency to make a vigorous protest against this unjustifiable, violent, ill-informed, and, as I think, baseless attack upon a body of as highly skilled, devoted, and gallant men as ever served the State. In my judgment—and I venture to say I have had unique opportunities to study the work as a disinterested observer—I say the Army Medical Service deserves not censure, not carping criticism, not personal libels, but the whole-hearted gratitude of the whole community.

Mr. HODGE urged that something should be done for nurses who had broken down on army service.

The Under Secretary's Reply.

Mr. TENNANT (Under Secretary of State for War) said that it was not necessary for him to say how much the War Office appreciated the devotion and self-sacrificing services rendered by the nurses throughout this war. He would take care to see that proper action was taken. He hoped that the honourable Member for St. Augustine's might come to think that he had been mistaken in many respects. The position of the Medical Advisory Board had been changed by the Esher Committee. The Army Council was set up, and he thought that during the time Mr. Arnold Forster was Secretary for War the present practice of an Advisory Board was adopted. The members had been constantly consulted. Sir Alfred Keogh (the right honourable gentleman proceeded to say), when he arrived after the unfortunate illness of Sir Arthur Sloggett, was engaged on the important work of sanitation. At the outbreak of war sanitation is more important than anything else. The members of the Advisory Board were Dr. Newsholme, Dr. Robinson, Sir Frederick Treves, the sanitary officer at Aldershot, and General Anderson, and the responsibility for sanitation in France was placed upon this body. It gave advice as to this most important service. Dr. Leonard Hill, the remaining member of the Board, was placed on the Committee as a physiologist to deal with poisonous gases. The work done by this body against the gas attacks of the enemy had been quite extraordinary. "It does not really rest with me," he added, "to contradict the statement made by the honourable Member about the battle of Loos. I do not know what impression the honourable Member gave to the House, but my own impression was that so far from his speech being accurate it was nothing of the kind. After all, the proof of the pudding is in the eating. My honourable friend will admit that the work done by the Army Medical authorities has been admirable."

Mr. MCNEILL: I never contested it.

Mr. TENNANT: Did not his speech yesterday convey an entirely opposite impression?

Mr. MCNEILL: No.

Mr. TENNANT: I say it did, and I appeal to any honourable Member in the House whether the impression it conveyed to the House was not that here you had an Army Medical Service which, if the Advisory Board had only been used, would have saved suffering and misery.

Mr. MCNEILL: So they would.

Mr. TENNANT: I say it is absolutely untrue. The medical service generally has been extraordinary. To convey an opposite impression is a very great disservice to the State, because you are going to frighten people and make the relatives of those who have husbands, brothers, and sons out at the front feel that if they should have the misfortune of being wounded, they would go through the misery of being left on the battlefield for a very long time. As we know, they are often brought into hospital within two and a half hours and three and a half hours, the quickest time on record in such circumstances. I do regret very much, and I resent on behalf of my medical advisers, any false impression such as that which would have been created by the honourable Member if it had not been for the speech of the Member for Fareham.

Mr. MCNEILL: It is quite obvious that I was not speaking from my own knowledge, and to that extent my honourable and gallant friend who spoke this afternoon, of course, had the advantage of me. He was able to speak to the House from what he had himself seen, but I think it is only just to myself to say that I said nothing in the course of my speech which I had not from the information of people who had seen quite as much as my honourable and gallant friend, and were in many respects much more qualified to judge.

Mr. TENNANT: That really is a matter of opinion. I confess it amazes me to hear the honourable Member say what he has said, for every soldier who has been at the front, whom I have ever seen, and all persons who come from the front, say that the medical service has really left nothing to be desired. It has been wonderful.

TUESDAY, MARCH 21ST.

Medical Arrangements in Mesopotamia.

Sir JOHN JARDINE asked the Under Secretary for War what description of boat was used for the conveyance of wounded soldiers from Nasiryeh, on the Euphrates, to the base hospital at Basra; and whether the garrison hospital at Nasiryeh had sufficient supplies of instruments, medicines, and other requisite articles for the wounded and the sick.—Mr. TENNANT answered: I have no doubt that every available boat would be used, but I have received no official report on this matter. As regards the second part of the question, no demands have been made upon the War Office for instruments. I could not definitely state that there had been no shortage of instruments, medicines, &c., at Nasiryeh, without ascertaining by cable, but no report of shortage has been received.

Answering Sir E. CORNWALL, Mr. LLOYD GEORGE said that he was informed that no information had been received as to the health of the troops and the condition of the wounded under General Townshend's command.

Venereal Disease in Egypt and Salonika.

Colonel LOCKWOOD asked the Under Secretary for War to state the percentage of admissions to hospital for venereal diseases of the troops in Egypt and Salonika up to the end of February.—Mr. TENNANT answered: In Egypt during the last eight weeks the percentage of admissions has averaged 0·09 per week. This, I understand, is equal to an average annual admission-rate of 46·8 per 1000. No figures have been received for Salonika.

Dope Poisoning.

In the course of a reply to Mr. ROWLANDS regarding a death from dope poisoning, Mr. BRACE (Under Secretary for the Home Department) said: The obstacle to the use of non-poisonous dope is that one of the essential ingredients is not produced commercially in this country at present and sufficient quantities of it are not available, but the departments concerned are making every effort to arrange for an increased supply. Meanwhile new instructions embodying further administrative measures for guarding against the danger have been issued by the Home Office to all aircraft factories, and steps are being taken to extend the use by contractors of a dope made under War Office supervision which contains as little tetrachlorethane as possible.

WEDNESDAY, MARCH 22ND.

Medical Arrangements in Mesopotamia.

On the motion for the second reading of the Consolidated Fund Bill,

Colonel YATE raised questions regarding the Mesopotamia Expedition, and said that the medical arrangements there had broken down.

Mr. CHAMBERLAIN (Secretary for India), in the course of his reply, said that the Mesopotamia campaign began as a small operation within the resources of the Indian Government. It had grown until it had exceeded those resources and the control was now exercised by the Imperial General Staff. He was afraid that he had to admit that in his opinion there had been a lamentable breakdown of the hospital arrangements. He would not seek to palliate the state of things which he had learned had taken place, but he would beg the House to remember that this campaign had been carried on under circumstances of very great difficulty. According to the latest information which he had, there had been an abundance of hospital supplies of all kinds at Basra at all times, but he thought without doubt there had been a grave, and he was inclined to think an inexcusable, shortage of the necessary medical supplies above Basra. This in large part was no doubt due to the enormous difficulties of river transit. There had been a shortage of transport. River transport of a suitable draft was not easily provided. The Government had swept India, Egypt, and this country to secure it, but a certain quantity had been lost *en route*. He did not think that a

shortage of transport accounted for all that had happened. Neither the Home Government nor the Government of India were satisfied with the state of things. He went on to say that General Bingley and Sir William Vincent, who had been appointed to go to Mesopotamia and investigate the facts, had begun their inquiry in Bombay, where they were able to see a number of officers invalided from the Mesopotamian front. They had also transmitted to this country a series of questions which they desired should be addressed to certain officers here, also invalided from Mesopotamia. These two gentlemen had already proceeded to Mesopotamia to carry out their inquiries on the spot. He hoped that the measures taken would prevent any repetition of what had been complained of. The House would be glad to know that in regard to the last action in which our troops had taken part, General Aylmer had informed the Chief of the Imperial General Staff that he was extremely satisfied with the arrangements made for the wounded in the field and on their arrival at Wadi. They were all progressing favourably.

Appointments.

Successful applicants for vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

BOLTON, S. J., L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Aghadowey District of the county of Londonderry.

LIDDELL, R. M., M.B., Ch.B. Edin., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Wolston District of the county of Warwick.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).
When the application of a Belgian medical man would be considered the advertisers are requested to communicate with the Editor.

BELGRAVE HOSPITAL FOR CHILDREN, Clapham-road, S.W.—Resident Medical Officer for six months. Salary at rate of £100 per annum with board, residence, and washing.

BIRMINGHAM AND MIDLAND EYE HOSPITAL, Church-street.—Resident Surgeon.

BIRMINGHAM GENERAL DISPENSARY.—Resident Medical Officer, unmarried. Salary £250 per annum, with apartments, fire, lights, and attendance.

BOLTON INFIRMARY AND DISPENSARY.—Female Second House Surgeon and Female Third House Surgeon. Salary £200 and £180 per annum respectively, with apartments, board, and attendance.

BOOTLE BOROUGH HOSPITAL.—Junior House Surgeon. Salary £170 per annum, with board, lodging, and laundry.

BOURNEMOUTH, ROYAL VICTORIA AND WEST HANTS HOSPITAL.—Honorary Electro-therapeutist.

BRISTOL GENERAL HOSPITAL.—Casualty House Surgeon. Also House Physician. Both for six or three months. Salary at rate of £175 per annum each, with board, residence, &c.

BRISTOL ROYAL HOSPITAL FOR SICK CHILDREN AND WOMEN.—Female House Surgeon and House Physician. Salary £150 per annum, with board, rooms, attendance, and laundry.

BRISTOL ROYAL INFIRMARY.—House Physicians and House Surgeons. Salary at rate of £120 per annum, with board, apartments, and laundry.

BURNLEY, VICTORIA HOSPITAL.—Female House Surgeon. Salary £160 per annum, with residence, board, and washing.

CARDIFF, KING EDWARD VII.'s HOSPITAL.—Two House Surgeons for six months. Salary at rate of £140 per annum each, with board, residence, and laundry.

CHARING CROSS HOSPITAL.—Resident Medical Officer. Also Medical Registrar.

DUDLEY, GUEST HOSPITAL.—Senior Resident Medical Officer. Salary £150 per annum, with residence, board, and washing.

DURHAM COUNTY HOSPITAL.—House Surgeon. Salary £150 per annum, with board, lodging, &c.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark, S.E.—House Surgeon. Salary at rate of £160 per annum, with board, residence, and washing. Also Clinical Assistants in Out-patient Departments.

GREAT NORTHERN CENTRAL HOSPITAL, Holloway-road, N.—House Physician for six months. Salary at rate of £100 per annum, with board, residence, and laundry.

GUILDFORD, ROYAL SURREY COUNTY HOSPITAL.—House Surgeon. Salary £150 per annum, with board, residence, and laundry.

HUDDERSFIELD ROYAL INFIRMARY.—Junior House Surgeon. Salary £100 per annum, with board, residence, and laundry.

LEEDS PUBLIC DISPENSARY.—Female Resident Medical Officer. Salary £130 per annum, with board, residence, and laundry.

LISCARD, WALLASEY, VICTORIA CENTRAL HOSPITAL.—House Surgeon. Salary £250 to £300 per annum, all found.

LIVERPOOL, DAVID LEWIS NORTHERN HOSPITAL.—One House Physician and Two House Surgeons for six months. Salary at rate of £150 per annum, with board, &c.

LIVERPOOL INFIRMARY FOR CHILDREN, Myrtle-street.—Resident House Physician and Resident House Surgeon for six months. Salary £30 each, with board and lodging.

LONDON HOMŒOPATHIC HOSPITAL, Great Ormond-street, W.C.—House Surgeon. Also Two Resident Medical Officers. Salary at rate of £80 per annum, with board, apartments, and laundry.

MANCHESTER CHILDREN'S HOSPITAL, Pendlebury, near Manchester.—Two Female Resident Medical Officers for six months. Salary at rate of £100 per annum.

MANCHESTER UNION, BOOTH HALL INFIRMARY FOR CHILDREN, Charlestown-road, Blackley.—Temporary Resident Medical Officer. Salary 7 guineas per week, with board, residence, &c.

NEW HOSPITAL FOR WOMEN, Euston-road, N.W.—Female Radiographer. Salary £30 per annum. Also Female Assistant Pathologist. Salary £100 per annum. Also Female Senior Clinical Assistant to Out-patient Department.

NORFOLK, HEMPTON, FAKENHAM, 2 1ST SOUTH MIDLAND MOUNTED BRIGADE.—Three Medical Officers.

PORTSMOUTH WORKHOUSE INFIRMARY, WORKHOUSE, AND CHILDREN'S HOME.—Female First Assistant Medical Officer. Salary £180 per annum, with apartments, rations, &c.

PUTNEY HOSPITAL, Putney Common, S.W.—Resident Medical Officer. Salary £150 per annum, with rooms, board, and laundry.

ROCHESTER, ST. BARTHOLOMEW'S HOSPITAL, Kent.—Senior Resident House Surgeon.

ROYAL LONDON OPHTHALMIC HOSPITAL, City-road, E.C.—Out-patient Surgical Officer. Salary at rate of £50 per annum.

ST. PANCRAS INFIRMARY, London.—Senior Assistant Medical Superintendent of South Infirmary, Pancras-road, N.W., and Senior Assistant Medical Officer of House adjacent. Also Locum Tenens at above Institutions. Salary at rate of £7 7s. per week, with usual residential allowances.

SALISBURY GENERAL INFIRMARY.—House Surgeon and Assistant House Surgeon. Salary £150 and £100 per annum respectively, with apartments, board, lodging, and washing.

SHEFFIELD ROYAL INFIRMARY.—House Surgeon. Salary £100 per annum, with board and residence.

SOUTHAMPTON FREE EYE HOSPITAL.—House Surgeon. Salary £100 per annum, with board, lodging, and laundry.

SOUTH LONDON HOSPITAL FOR WOMEN, 88–90, Newington-causeway, S.E.—Female Assistant Physician and Assistant Surgeon.

VICTORIA HOSPITAL FOR CHILDREN, Tite-street, Chelsea, S.W.—House Surgeon. Salary by arrangement, with board and lodging.

WIGAN, ROYAL ALBERT EDWARD INFIRMARY AND DISPENSARY.—Junior House Surgeon. Salary £150 per annum, with board, apartments, and washing.

Births, Marriages, and Deaths.

BIRTHS.

DE ZILWA.—On Feb. 2nd, at Villa Mireille, Ward-place, Cinnamon-gardens, Colombo, Ceylon, the wife of Lucian de Zilwa, M.D., B.Sc. Lond., of a daughter.

GASKELL.—On March 20th, at Ladbroke-grove, W., the wife of John Foster Gaskell, M.D Cantab., Captain, R.A.M.C. (T.), of a son.

GIBSON.—On March 18th, at Carlisle-road, Hove, the wife of Charles W. Gibson, M.R.C.S., of a daughter.

GUTTERIDGE.—On March 13th, at Northlands-road, Southampton, the wife of Temporary Captain B. G. Gutteridge, R.A.M.C., of a son.

ORLEBAR.—On March 11th, the wife of Jeffrey Alexander Amherst Orlebar, M.B., Pakyns Manor, Hurstpierpont, near Brighton, temporary Lieutenant, R.A.M.C., of a son.

PEARCE.—On March 17th, at Enfield House, Bury Old-road, Manchester, the wife of Dr. P. Leslie Pearce, of a daughter.

SHANN.—On March 16th, at St. Dunstans, Canterbury, to Dr. and Mrs. Thornhill Shann, a son.

WARNER.—On March 16th, at Croydon, the wife of Thomas Warner, M.D., temporary Lieutenant, R.A.M.C., of a son.

YOUNG.—On March 13th, at Holly Bank, King's Heath, Birmingham, the wife of Graham Pallister Young, M.B., B.S. Lond., M.R.C.S., L.R.C.P. Lond., of a daughter.

MARRIAGES.

BELL—AUSTIN.—On March 15th, at Mortonhall-road, Edinburgh, Francis Gordon Bell, M.D. Edin., F.R.C.S. Eng., temporary Captain, R.A.M.C., to Marion Welsh Berry, elder daughter of Mr. and Mrs. Austin, of Bank of Scotland House, Kilmarnock.

DEATHS.

BALL.—On March 17th, at his residence, Merrion-square, Dublin, Sir Charles Bent Ball, temporary Lieutenant-Colonel, R.A.M.C., aged 65 years.

CHAVASSE.—On March 12th, in his 29th year, of broncho-pneumonia, at No. 2 General Hospital, B.E.F., Captain Arthur Ryland Chavasse, M.B. Oxon., R.A.M.C., only son of Lady Chavasse and the late Sir Thomas Chavasse, of The Linthurst Hill, Barnt Green, Worcestershire.

FELCE.—On March 20th, at Firlands, Burgess Hill, Sussex, Stamford Felce, M.R.C.P.E., M.R.C.S., late of Paddington, aged 80 years.

GAVIN.—On March 12th, in France, accidentally killed by a fall from his horse, Neil Murphy Gavin, F.R.C.S. Edin., temporary Lieutenant, R.A.M.C., aged 42 years.

MURDOCH.—On March 20th, after a short illness, Dr. Mary Charlotte Murdoch, of Hull.

STOCKER.—On March 19th, at Withington, Glos., James Reginald Stocker, M.B. Lond., M.R.C.S., M.R.C.P., in his 72nd year.

N.B.—A fee of 5s. is charged for the Insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

HEALTH OF MAURITIUS.

A BELATED report on the Blue-book of Mauritius for the year 1914 has just been presented to Parliament. It gives the estimated total population of the island as 376,233, exclusive of the dependencies (7024). There were 14,024 births registered during the year. The law allows a delay of 45 days for free registration, and the number of births which were not registered owing to death intervening before registration was 1205. The total number of births was accordingly 15,229, of which 7520 were males and 7709 females, giving a proportion of 40·8 infants born to 1000 persons living. The deaths registered numbered 12,134, giving a proportion of 32·5 deaths to 1000 persons living. The birth-rate amongst the general population was 38 per 1000 as compared with 38·2 in 1913, and amongst the Indian population 42 per 1000 as compared with 41·9 in 1913. The death-rate amongst the general and Indian populations was 30·4 and 33·4 per 1000 respectively, as against 36·3 and 36·6 respectively in the previous year.

The general health conditions during the year were not favourable. The number of patients treated at the public hospitals and dispensaries showed an increase over that recorded in 1913. From the returns of the civil status officers it appears that the diseases which caused the largest number of deaths in 1914 were malaria (3914), pneumonia (919), tuberculosis (974), and influenza (268); but it should be observed that a medical certificate is not required in all cases. The statistics from the public hospitals and dispensaries also show that the rise in admissions was principally due to malaria and influenza, the admissions for those diseases being more numerous between March and August. There were 125 cases of plague, this being the lowest number in any year since the outbreak of the disease; 111 cases were fatal, giving a death-rate of 88·8 per cent. In 1913 there were 313 cases with 261 deaths, giving a death-rate of 83·4 per cent. The number of cases of enteric fever increased from 172 in 1913 to 234 in 1914. The cases occurred principally in the districts of Plaines Wilhems, Port Louis, and Moka. The spleen census and the treatment of school children with quinine, as well as the free house-to-house distribution of quinine, have been continued under the supervision of the sanitary wardens, and major anti-malarial works have been carried out at various centres. The number of children presented for vaccination at the public vaccine stations was 12,537, as compared with 8925 in 1913. Of this number, 12,460 were certified by the public vaccinators to have been successfully vaccinated.

SUGAR, WAR, AND WEALTH.

To the Editor of THE LANCET.

SIR,—With reference to the article in THE LANCET last week showing the growth of the use of sugar, the total produce of the world in 1911-12 is stated to be of beet sugar 6,800,000 tons and of cane sugar 9,000,000 tons. Of the beet sugar Germany and Austria-Hungary together produced 2,611,000 tons. Of the cane sugar India produced 2,390,000 tons. An American estimate for 1911 gives the world production as follows: Beet, 8,560,346 English tons; cane, 8,441,183 English tons; or a total of 17,001,529 tons. In that same year the United States produced of beet sugar a total, curiously given in pounds, of 1,238,280,000 lb. In the late "sixties" the average was 896,000 lb. per annum only. The growth of the use of sugar in Great Britain is well shown by Mulhall's figures as follows per inhabitant: In the year 1730, 9 lb.; in 1780, 14 lb.; in 1830, 20 lb.; in 1880, 68 lb.

It takes about 7 tons of beet to make 1 ton of sugar, but it used to take more like 12 or 14 tons of beet to make 1 ton of sugar in the "fifties." If the bounty-giving Government fixed as a basis of taxation that 10 tons of sugar could come from 100 tons of beet and the producer made 12 tons of sugar instead, he derived considerable benefit in building up the trade. That is where the improvements of science have benefited trade, and it shows that applied science pays, as the Government later on participates in the benefit of the improvements.

In "The Commercial Handbook of France," by Frederick Martin (1867), the author, after setting out a table showing the quantities of sugar manufactured in France from 1848 to 1865 (in the first-named year 56,287,000 kilogrammes, and in the latter 209,648,000 kilogrammes) states that "the enormous increase in the production of beetroot sugar during the period in the foregoing table was due chiefly to the discovery of improved means of manufacture tending to extract the utmost quantity of saccharine matter from the raw material. In the district of Valenciennes especially the greatest efforts have been made to arrive at this result, and many manufacturers have paid large sums to chemists for bringing the latest scientific discoveries to bear upon the process."

With war and the reduction of wealth the consumption of sugar is also being reduced, so there is still the connexion between the three being made strikingly obvious, and also the fact that sugar is still regarded as a "luxury," although many years ago writers stated that the aforetime "luxury" had become a "necessity," as tea is now considered by the majority a "necessity," but was once a "luxury." Different points of view are, however, taken in this regard. The question of tea is involved with that of sugar, for the housewife now has difficulty in purchasing sugar without at the same time buying tea. The extra tea purchased will require more sugar unless the oriental fashion of tea without sugar, or with lemon juice or some other addition should become the vogue.

I am, Sir, yours faithfully,

London, March 20th, 1916. F. W.

THE PROPHYLAXIS OF TELEPHONE TROUBLE.

THE Controller of the London Telephone Service has circulated a little pamphlet, entitled "Telephone Trouble: by a Journalist," containing a few simple rules for telephone working. The writer points out that no other public service depends so completely on the intelligent and sympathetic coöperation of the public. All are agreed that the telephone service needs speeding up. The writer of the pamphlet states his honest belief that a general attitude of confidence in and of courtesy to the operator would do more than any other single thing to give us an immediate and substantial improvement in the telephone service. We cordially agree with this view, and press it upon our readers.

LIBRARY OF THE COLLEGE OF PHYSICIANS OF PHILADELPHIA: ANNUAL REPORT FOR THE YEAR 1915.

THE most interesting book added to this library during the year is the first edition of the first work printed on obstetrics: Der swangern Frauwen und Heebamen Rosengarten, by Eucharius Roslin (Argentine, Flach, 1513, quarto). It is based on a manuscript by Moschion, a writer of the second century. Of the 31 universities and faculties of medicine, with whom exchanges are generally made, only five were heard from during the year: Amsterdam, Basel, Bern, Leiden, and Lund. Some 250 periodicals ceased to arrive at the library and 20 others were received at irregular intervals. Most of the books received during the year, other than English and French, came through Amsterdam. In comparison with the number of new publications received during the year 1913 there was a loss of about 90 per cent. of the books published in the French language, 69 per cent. of the books published in the German language, and 34 per cent. in the publications of Great Britain.

THE VALUE OF WOOLLEN CLOTHING.

A FIRM of woollen manufacturers with a well-known registered trade-mark writes stating that the Government insisted on clothing the troops practically from top to toe in nothing but woollen garments, despite the greatly enhanced price of wool, with the result, as they believe, that the troops stood the winter life in the trenches in Flanders wonderfully well. They suggest that had the men's clothing not been woollen a very different story would have been told, and they solicit the opinion of leading medical men in France in confirming the importance of wool from the health standpoint.

DELAYED POST-MORTEM SYMPTOMS IN CARBONIC OXIDE POISONING.

IN a case of carbonic oxide poisoning due to the escape of this gas from a gas-heated boiler at Eastbourne Dr. James Adams, the Eastbourne police surgeon, reported that in his first post-mortem examination he could find no evidence of disease to account for death. On examining the body on the following day he noticed a striking alteration. There was then some pink staining on the lower part of the sides of the body and elsewhere, which, as the coroner (Mr. G. V. Benson, M.R.C.S., L.R.C.P., of Lewes) suggested, meant that some chemical change was going on in the blood. This was proved on Dr. Adams making a further examination a day later, when the pink staining had much increased in intensity and area. Subsequent testing of the blood proved the presence of carbonic oxide. Only a coroner who is a qualified medical man could have pointed out that, to quote his own words, "if a person has been ill and has died as a result of carbonic oxide poisoning it may not be suspected, because the signs may not be evident till some considerable time after death." In most cases, he added, the body would be examined shortly after death.

HOSPITAL SUNDAY FUND AT BRISTOL.

£2355 have been raised as a result of the Hospital Sunday collections in Bristol. This is the largest sum that has been collected, the highest previous amount being £2095.

M. McD.—The substance of the letter appeared in THE LANCET of Jan. 8th, and was the subject of an annotation on teething as a cause of symptoms in infants.

M.D. (Machynlleth) has omitted to enclose his card.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, March 22nd, 1916.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks
Mar. 16	29·550	S.E.	0·30	67	54	40	45	45	Raining
,, 17	29·850	N.	0·13	63	51	43	43	43	Overcast
,, 18	29·900	S.E.	...	66	54	43	44	45	Overcast
,, 19	29·750	N.E.	...	69	55	45	48	50	Overcast
,, 20	29·640	E.	0·29	76	54	50	49	50	Overcast
,, 21	29·414	N.E.	0·23	49	43	42	42	42	Raining
,, 22	29·330	N.E.	0·57	51	41	38	38	38	Raining

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.

MEETINGS OF SECTIONS.

Tuesday, March 28th.

PSYCHIATRY (Hon. Secretaries—Bernard Hart, G. F. Barham): at 8.30 P.M.

Paper:

Dr. Bernard Hart: The Psychology of Rumour.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF PHYSICIANS OF LONDON, Pall Mall East.

THURSDAY.—5 P.M., Lumleian Lectures:—Dr. F. E. Batten: Acute Poliomyelitis. (Lecture I.)

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, W.C.

Course of Lectures on the Anatomy of the Human Body, for First-aid and Ambulance Students (open to all members of ambulance companies and first-aid classes):—

MONDAY, WEDNESDAY, AND FRIDAY.—5.30 P.M., Prof. A. Keith. 4 P.M. to 7 P.M., Exhibition of Anatomical Preparations and Specimens in the Theatre on lecture days, and between 10 A.M. and 5 P.M. in the Hall of the Museum on the following day.

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—2 P.M., Medical and Surgical Clinics. X Rays. Mr. Gray: Operations. Mr. B. Harman: Diseases of the Eye. Dr. Simson: Diseases of Women.

TUESDAY.—2 P.M., Medical and Surgical Clinics. X Rays. Mr. Addison: Operations. Dr. Banks Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Banks Davis: Operations of the Throat, Nose, and Ear. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations. Dr. Simson: Diseases of Women.

THURSDAY.—2 P.M., Medical and Surgical Clinics. X Rays. Mr. Gray: Operations. Mr. B. Harman: Diseases of the Eye.

FRIDAY.—10 A.M., Dr. Simson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Addison: Operations. Dr. Banks Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Banks Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Eye Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

MONDAY.—Clinics:—10.30 A.M., Surgical Out-patients (Mr. E. Gillespie). 2.30 P.M., Medical Out-patients (Dr. T. R. Whipham): Gynæcological Out-patients (Dr. Banister). 3 P.M., Medical In-patients (Dr. R. M. Leslie).

TUESDAY.—2.30 P.M., Surgical Operations (Mr. Carson). Clinics:—Medical Out-patients (Dr. A. G. Auld); Surgical Out-patients (Mr. Howell Evans); Nose, Throat, and Ear Out-patients (Mr. C. H. Hayton). Radiography (Dr. Metcalfe). 3.30 P.M., Medical In-patients (Dr. A. J. Whiting).

WEDNESDAY.—Clinics:—2.30 P.M., Throat Operations (Mr. C. H. Hayton). Children Out-patients (Dr. T. R. Whipham); Eye Out-patients (Mr. R. P. Brooks); Skin Out-patients (Dr. H. W. Barber). 5.30 P.M., Eye Operations (Mr. R. P. Brooks).

THURSDAY.—2.30 P.M., Gynæcological Operations (Dr. A. E. Giles). Clinics:—Medical Out-patients (Dr. A. J. Whiting); Surgical Out-patients (Mr. Carson); Radiography (Dr. Metcalfe). 3 P.M., Medical In-patients (Dr. R. M. Leslie).

FRIDAY.—2.30 P.M., Surgical Operations (Mr. Howell Evans). Clinics:—Medical Out-patients (Dr. A. G. Auld); Surgical Out-patients (Mr. E. Gillespie); Eye Out-patients (Mr. R. P. Brooks).

ROYAL SANITARY INSTITUTE, Physics Theatre, University, Liverpool.

FRIDAY.—3.30 P.M., Discussion on Tubercular Diseases of Children and Milk Supply (opened by Prof. J. M. Beattie). Dr. T. W. N. Barlow, Dr. H. J. Cates, Dr. W. A. Daley, Dr. W. Hanna, Dr. E. W. Hope, and Dr. M. Young will take part in the discussion. General discussion is invited.

SATURDAY.—Arrangements will be made to enable Members interested in Housing, Port Sanitary Administration, Tuberculosis Work, &c., to see the practical results in operation.

THE THROAT HOSPITAL, Golden-square, W.

MONDAY.—5.15 P.M., Special Demonstration of Selected Cases.
THURSDAY.—5.15 P.M., Clinical Lecture.

ROYAL INSTITUTION OF GREAT BRITAIN, Albemarle-street, Piccadilly, W.

SATURDAY.—3 P.M., Prof. Sir J. J. Thomson, O.M.: Radiations from Atoms and Electrons. (Lecture IV.)

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITOR," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention should be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, **AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.**

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used

BOOKS, ETC., RECEIVED.

ALLEN, GEORGE, AND UNWIN, LIMITED, London.
Reflections on Violence. By Georges Sorel. Translated by T. E. Hulme. Price 7*s.* 6*d.* net.

BAILLIÈRE, J. B., ET FILS, Paris.
Formulaire des Médicaments Nouveaux pour 1916. Par H. Bocquillon-Limousin, Paris. Introduction par le Pr Albert Robin. Prix 3fr.

BUTTERWORTH AND CO., AND SHAW AND SONS, London.
Housing of the Working Classes Acts, 1890-1909, and the Housing Acts, 1914. By Charles E. Allan, M.A., LL.D., and Francis J. Allan, M.D., D.P.H. Fourth edition. Price 12*s.* 6*d.* net.

CHURCHILL, J. AND A., London.
Surgery in War. By Alfred J. Hull, Major, R.A.M.C. With a Preface by Sir Alfred Keogh, K.C.B., Director-General, Army Medical Services. Price 10*s.* 6*d.* net.
Text-book of Anatomy and Physiology for Training Schools and other Educational Institutions. By Elizabeth R. Bundy, M.D. Fourth edition, revised and enlarged. Price 8*s.* 6*d.* net.
Sight Testing Made Easy. By W. Wright Hardwicke, M.D. St. And., M.R.C.P. Edin. Third edition. Price 2*s.* 6*d.* net.

HEINEMANN, WILLIAM, London.
Vive La France. By E. A. Powell. Price 3*s.* 6*d.* net.
Text-book of Operative Dentistry by Various Authors. Edited by C. N. Johnson, M.A., L.D.S., D.D.S. Third edition, revised and enlarged. Price 25*s.* net.
Human Motives. By J. J. Putnam, M.D. Harvard University. Price 5*s.* net.
The Meaning of Dreams. By J. H. Coriat, M.D. Price 5*s.* net.
Sleep and Sleeplessness. By H. A. Bruce. Price 5*s.* net.

LAURIE, T. WERNER, London.
How to Win the War: The Financial Situation. By Thomas Farrow and W. Walter Crotch. With Introduction by Right Hon. Lord Devonport. Price 1*s.* net.

LEONARD, W. M., Boston, Mass.
Starvation Treatment of Diabetes. By Lewis Webb Hill, M.D., and Rena S. Eckman. With Introduction by Richard C. Cabot, M.D. Second edition. Price $ 1.00.

LONGMANS, GREEN, AND CO., London.
The Endocrine Organs: An Introduction to the Study of Internal Secretion. By Sir Edward A. Schäfer, D.Sc., M.D., F.R.S. Price 10*s.* 6*d.* net.

METHUEN AND CO., London.
Care of the Body. By Francis Cavanagh, M.D. Price 1*s.* net.
Health of the Skin. By George Pernet, M.D. Price 1*s.* net.
Eyes of Children. By N. Bishop Harman, M.A., M.B. Cantab. Price 1*s.* net.

OFFICE OF SURGEON-GENERAL, Washington.
Index Catalogue of the Library of the Surgeon-General's Office, U.S. Army. Second Series. Vol. XX. V.—Waterworks.

PHILOPOLIS PRESS, St. Paul-buildings, San Francisco.
New Concepts in Diagnosis and Treatment: Physico-Clinical Medicine. By Albert Abrams, A.M., LL.D., M.D. Heidelberg, F.R.M.S.

POLLARD AND CO., Exeter.
Practical Guide to the Inspection of Meat and Foods. By A. E. Bonham, Chief Sanitary Inspector, Public Abattoirs, Exeter.

POOR-LAW PUBLICATIONS, LIMITED, Furnival-street, E.C.
Children's Nursing: Lectures to Probationers. By C. Seymour Yapp. Price 2*s.* 6*d.* net.

SAUNDERS, W. B., COMPANY, London and Philadelphia.

Sexual Impotence. By Victor G. Vecki, M.D., Consulting Genito-Urinary Surgeon to the Mount Zion Hospital, San Francisco. Fifth edition. Price 10s. 6d. net.

Neurology. By C. Judson Herrick, Ph.D., Professor of Neurology in the University of Chicago. Price 7s. 6d. net.

Nutritional Physiology. By Percy Goldthwait Stiles, Instructor in Physiology at Harvard University. Price 6s. net.

Bandaging. By A. D. Whiting, M.D., Instructor in Surgery at the University of Pennsylvania. Price 6s. net.

Pathogenic Bacteria and Protozoa. By Joseph McFarland, M.D., Professor of Pathology and Bacteriology, Medico-Chirurgical College of Philadelphia. Eighth edition. Price 18s. net.

Cancer of the Stomach. By Frank Smithies, M.D., Gastro-enterologist to Augustana Hospital, Chicago. With a chapter on Surgical Treatment. By Albert J. Ochsner, M.D., Professor of Clinical Surgery, University of Illinois. Price 24s. net.

Practical Cystoscopy. By Paul M. Pilcher, M.D., Consulting Surgeon to the Eastern Long Island Hospital. Second Edition. Price 25s. net.

Bone Graft Surgery. By Fred. H. Albee, M.D., Professor of Orthopedic Surgery, New York Post-Graduate Medical School. Price 25s. net.

Medical Clinics of Chicago. Vol. I. Parts 2, 3, and 4. Price per year of six numbers, paper 35s., cloth 50s.

SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION, 148, Eighth Avenue N., Nashville, Tenn.

Transactions of the Southern Surgical and Gynecological Association, Vol. XXVII. Edited by W. D. Haggard, M.D.

SURGERY PUBLISHING COMPANY, 92, William-street, New York.

Surgical Operations with Local Anæsthesia. By Arthur E. Hertzler, A.M., M.D., Ph.D., F.A.C.S. Second edition. Price $3.

WESTMINSTER PRESS, Henrietta-street, W.C.

The Log of H.M.S. *Bristol*, May, 1914, to December, 1915. By William Buchan, Leading Signalman. Price 4s. net.

The following magazines, journals, &c., have been received:—Dublin Journal of Medical Science, St. Bartholomew's Hospital Journal, Philippine Journal of Science, Journal of State Medicine, Journal of Laryngology, Rhinology, and Otology, La Clinique Ophtalmologique, Annali d'Igiene, La Clinica Ostetrica, British Journal of Children's Diseases, Medicina Militar, Review of Neurology and Psychiatry, Brain, The Military Surgeon, Surgery, Gynecology, and Obstetrics, Medical Times, Albany Medical Annals, Archives of Pediatrics, Medical Journal of South Africa, Archives of Radiology and Electrotherapy, British Journal of Dental Science, American Journal of Orthopedic Surgery, Pediatrics, Indian Journal of Medical Research, Canadian Medical Association Journal, Public Health, Canadian Practitioner and Review, Dominion Medical Monthly, Tropical Diseases Bulletin, American Journal of Medical Sciences, British Dental Journal, &c.

Communications, Letters, &c., have been received from—

A.—Messrs. Allen and Hanburys, Lond.; Army and Navy Male Nurses' Co-operation, Lond., Hon. Secretary of; Sir Clifford Allbutt, Cambridge; Lieutenant Mark Anthony, R.A.M.C., Horsham; Dr. J. F. Anderson, Lond.; Dr. A. Aitchison, Bournemouth; Messrs. Arnold and Sons, Lond.; Ardath Tobacco Co., Lond.; Dr. James Adams, Eastbourne; Dr. J. L. Aymard, Johannesburg.

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I.—Insurance Committee for the County of London, Clerk of.

J.—Dr. R. W. Jubb, Dewsbury.

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N.—The Nurses' Co-operation, Lond.; Nemo; Mr. A. Norman, Wembley; National Health Insurance Commission (England), Solicitors' Department; National Food Reform Association, Lond.

O.—Mr. J. Offord, Lond.; Mr. Sam Osborn, Datchet.

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Y.—Dr. G. P. Yale, Cupar.

Letters, each with enclosure, are also acknowledged from—

A.—Dr. J. H. Ashworth, Margate; Mr. W. Armstrong, Buxton; Hon. Mrs. Alexander, Great Malvern.

B.—Dr. T. H. Brown, Lond.; Messrs. C. Birchall, Liverpool; Dr. R. M. Buchanan, Glasgow; Bishopstone House, Bedford, Medical Superintendent of; Messrs. B. Brown and Son, Huddersfield.

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N.—North Devon Infirmary, Barnstaple, Secretary of; North Riding Infirmary, Middlesbrough, Secretary of.

P.—Dr. R. F. Priestley, Huelva; Dr. P. Pope, Lond.; P. A. D.; Mr. A. Partridge, Brighton.

R.—Dr. M. J. Ryan, Monmouth; Dr. J. H. Reynolds, Lond.; Lieutenant A. A. Rutherford, R.A.M.C., France.

S.—Dr. A. H. Samy, Dikirnis; Salford Guardians, Clerk to the; Dr. F. E. Shipway, Lond.; Captain T. H. Scott, R.A.M.C., France; Captain W. J. Simpson, I.M.S.; Lieutenant E. A. Shirvell, R.A.M.C., Padstow.

T.—Dr. F. Thomson, Lond.; Mr. H. E. H. Tracy, Bury St. Edmunds; Dr. W. J. Tulloch, Broughty Ferry.

V.—Messrs. Gerth Van Wyk and Co., Lond.

W.—Mr. W. Watson, Leeds; Messrs. E. West and Beynon, Lond.; Mr. J. Whitehead, Pocklington; Miss Walker, Lond.; West Ham Hospital, Lond., Secretary of; W. E. F.; Messrs. Whiteley, Lond.; Women's Hospital for Children, Lond., Secretary of; Dr. S. A. K. Wilson, Lond.; Colonel C. Wallace, A.M.S., France; W. M.; Captain H. F. Woolfenden, R.A.M.C., France; Messrs. Wyman and Son, Lond.

X.—X., Birmingham.